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Vol. 11. No. 66.

FLORIDA

(Department of Agriculture.)

..Monthly Bulletin..

APRIL, 1901.

B. E. McLIN, Commissioner of Agriculture,
TALLAHASSEE, FLA.

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TALLAHASSEEAN BOOK AND JOB OFFICE, TALLAHASSEE, FLA.

630.7
F6q

Acreage and Condition of Crops for April, 1901, as Compared with Same Month, 1900.

Counties	Upland Cotton		Sea Island Cotton		Corn		Oats		Sugar Cane		Rye	
	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition
Alachua	....	...	90	80	80	100	90	90	90	100	......	....
Baker	.	...	100	100	75	50	....	...	75	50	....	....
Bradford	..	....	100	100	100	100	90	100	100	100	90	95
Brevard	..	...		..	100	100	...	..	110	100	....	......
Calhoun	90	95	85	80	95	90	100	100	100	100	...	......
Clay	...	..	90	85	90	85	100	100	100	100	...	....
Columbia	....	...	95	90	100	95	105	110	90	95	....	......
Dade	..	....	....	...	..	...	.....	...	....	....	....	......
DeSoto	....	....	..	....	100	95	100	100	95	90	100	80
Escambia	100	75	....	....	80	80	100	75	100	100	100	100
Franklin	..	...	....	...	90	90	90	90	95	100	..	....
Gadsden	75	60	85	60	90	75	120	150	100	100	...	....
Hillsborough	..	....	....	...	90	100	....	....	100	100	......	....
Holmes	100	90	....	....	80	80	90	75	100	90	100	100
Jackson	75	60	75	60	90	75	100	80	100	100	100	100
Jefferson	75	75	50	75	90	75	100	100	100	100	..	....
LaFayettee	......	....	90	80	80	90	85	90	75	100	......	....
Lake	....	....	....	....	100	100	100	100	......	....	100	100
Lee	...	..	....	....	100	100	90	95	100	100	.	......
Leon	90	100	....	..	100	100	120	100	100	100	100	90
Levy	....	......	90	95	85	100	100	100	100	100	....	....
Madison	75	70	75	70	80	80	100	110	75	75	100	100
Manatee	....	....	....	....	100	100	...	....	90	85	...	...
Marion	100	100	90	90	100	90	110	100	110	100	....	....
Nassau	....	....	......	....	100	90	....	....	90	90	....	....
Orange	...	....	...	..	100	110	100	100	90	95	...	...
Osceola	....	....	..	....	100	95	100	100	90	95	....	....
Polk	....	....	...	..	100	100	100	100	130	125	100	100
Putnam	....	......	80	90	90	90	90	90	85	90	100	100
St. Johns	....	..	....	...	40	50	50	40	100	90	....	....
Santa Rosa	100	112	....	...	100	100	100	100	100	125	....	....
Suwannee	....	....	90	100	90	90	60	90	90	90	50	50
Taylor	....	....	90	85	100	100	75	85	100	90	...	....
Volusia	....	..	...	....	...	...	..	....	..	...	....	....
Wakulla	90	100	80	90	75	50	90	90	110	100	90	90
Walton	90	100	....	...	80	75	100	100	100	100	..	......
General averages	88	78	86	85	90	88	95	95	93	96	95	92

Acreage and Condition of Crops—Continued.

Counties	Rice		Sweet Potatoes		Field Peas		Cassava		Velvet Peans		Cabbage	
	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition
Alachua	...	....	80	75	....	....	....	....	100	100	100	100
Baker	50	50	50	50	....	....	..	...	75	75	....	......
Bradford	90	100	100	100	...	....	100	100	100	100	100	100
Brevard	......	....	100	100	100	100	...	....	100	100	...	....
Calhoun	100	100	100	100	90	95	....	...	..	....	......	....
Clay	...	...	90	90	95	90	....	....	...	....	80	75
Columbia	100	100	80	90	...	...	......	...	....	......	....	...
Dade	....	....	100	100	100	100	100	100	....	...	100	100
DeSoto	90	80	95	90	90	90	95	90	100	95	100	95
Escambia	100	75	100	100	....	....	100	100	100	100	100	100
Franklin	......	......	100	100	100	100	....	....	....	..	...	....
Gadsden	...	...	100	100	...	....	....	...	......	....	....	....
Hillsborough	100	100	100	100	100	100	. .	......	100	100	....	....
Holmes	....	...	40	50	100	90	60	70	60	60	...	....
Jackson	100	100	60	50	......	..	....	...	......	..	...	....
Jefferson	....	...	....	....	....	...	..	....	...	......	....	....
Lafayette	100	80	....	...	...	....	......	....	110	100	...	....
Lake	....	....	....	....	75	80	100	100	100	100	75	80
Lee	100	100	100	100	....	......	....	....	100	100	....	....
Leon	100	100	100	100	......	..	.....	....	......	....	75	75
Levy	100	100	100	100	100	100	......	....	105	100	....	..
Madison	..	......	75	75	...	...	..	....	....	....	....	......
Manatee	75	60	100	100	100	100	....	....	110	100	100	100
Marion	100	100	100	90	100	90	100	100	100	100	100	100
Nassau	....	......	75	50	..	.	....	....	...	......	...	....
Orange	...	....	100	100	90	100	150	125	110	115	110	105
Osceola	....	...	....	...	100	85	120	100	130	100	100	100
Polk	175	150	100	100	120	100	100	100	160	160	100	125
Putnam	....	...	85	90	90	100	80	80	....	....	80	80
St. Johns	...	......	...	...	....	....	....	..	....	....	100	100
Santa Rosa	100	100	100	100	......	....	....	....	100	100	100	100
Suwannee	60	60	80	100	100	100	....	....	....	...	25	50
Taylor	80	75	90	90	....	....	....	....	..	......	....	....
Volusia	....	....	100	100	100	100	100	100	100	100	130	100
Wakulla	....	...	90	90	75	50	....	....	75	70	....	....
Walton	....	....	100	100	75	75	....	....	100	100	...	......
General averages	96	91	90	90	95	92	100	97	102	99	93	94

Acreage and Condition of Crops—Continued.

Counties	Irish Potatoes		Tomato		Cucumbers		Beans		Egg Plant		Peanuts	
	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition
Alachua	100	100	80	100	100	100	80	100	80	100	......	...
Baker	....	....	..	....	....	....	...	....	....	..	50	50
Bradford	90	100	90	95	100	100	100	100	100	100	100	100
Brevard	100	100	125	100	....	....	120	100	100	100	..	......
Calhoun	...	....	....	....	....	....	..	....	....	....	100	100
Clay	85	80	90	90	....	....	90	70	.. .	....	95	90
Columbia	100	100	...	....	....	....	95	95	....	....	.	......
Dade	105	110	105	105	100	100	....	......	95	95	..	....
DeSoto	110	105	100	100	90	90	95	100	100	100	90	100
Escambia	150	150	100	100	100	100	100	100	100	100	150	75
Franklin	75	100	90	95	90	90	85	90	90	95	90	95
Gadsden	100	80	..	...	....	....	.	...	......	....	100	100
Hillsborough	90	90	100	100	80	90	100	90	.....	.....	....	..
Holmes	190	90	....	......	....	......	...	...	.....	..	40	50
Jackson	.	...	..		....		.	...	...	....	60	80
Jefferson	90	95	100	100	...	....	85	90	....	....	100	100
Lafayette	....	....	...	....	...	....	......	....	....	....	....	...
Lake	50	85	75	90	....	....	100	100	...	..	....	....
Lee	100	100	100	100	......	...	100	90	100	100	...	......
Leon	100	100	90	85	100	100	100	100	....	....	....	....
Levy	100	95	100	90	100	90	100	95	....	....	75	100
Madison	100	110	50	50	50	60	100	90	....	....	90	85
Manatee	100	100	85	80	100	100	100	90	100	100	....	....
Marion	110	110	100	110	100	100	100	100	100	100	110	110
Nassau	50	50	75	75	50	50	50	50	....	....	...	. .
Orange	115	120	110	100	....	...	100	100	90	75	...	....
Osceola	95	65	110	85	100	70	110	90	80	60	....	......
Polk	100	125	100	100	100	100	100	100	150	100	100	100
Putnam	100	75	100	100	....	...	100	25	....	....	90	90
St. Johns	70	50	100	100	75	60	80	75	...	....	70	75
Santa Rosa	100	100	100	100	...	....	100	100	.	..	100	100
Suwannee	80	100	100	100	..	...	......	....	....	...	100	100
Taylor	....	...	..	.	...	....	80	80	......	...	100	100
Volusia	....	......	100	80	....	....	....	......	..	...	....	....
Wakulla	85	75	...	..	......	....	......	....	....	......	50	50
Walton	....	....	..	....	...	...	...	......	...	...	75	87
General averages	95	95	95	93	90	88	95	89	99	94	88	88

Acreage and Condition of Crops—Continued.

Counties	Hay		Tobacco		Strawberries		Watermelons		Cantaloupes		Orange Trees
	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Condition
Alachua	....	....	....	....	....	......	80	100	90	100	....
Baker	....	....	..	..	....	....	...	...	...	...	100
Bradford	....	100	100	100	80	100	100	100	100	100	100
Brevard	....	....	....	....	....	....	100	90	100	90	125
Calhoun	....	....	....	.. ..	....	....	100	100	...	....	85
Clay	....	......	....	...	....	..	100	100	......	...	60
Columbia	....	....	....	....	100	100	80	100	....	....	....
Dade	....	....	....	....	105	110	....	...		...	110
DeSoto	85	90	90	100	110	120	95	100	100	100	100
Escambia	100	100	100	100	100	100	75	75	75	75	....
Franklin	....	.....	....	...	100	100	100	100	100	100	....
Gadsden	...	....	110	90	....	....	....	....	....	....	....
Hillsborough	....	......	..	..	110	100	110	100	....	......	100
Holmes	.....	....	.....	....	....	....	50	75	....	...	....
Jackson	....	....	....	....	..	......	75	75	....	....	....
Jefferson	....	......	..	....	....	....	75	75	75	75	... ...
Fafayette	..	......	....	....	....	....	......	....	....	......	... ...
Lake	...	....	....	....	60	90	100	100	....	...	50
Lee	100	100	....	....	....	...	....	......	....	....	125
Leon	....	....	90	80	100	100	110	100	100	100	....
Levy	....	....	....	....	......	....	90	90	100	90	110
Madison	....	....	....	....	110	110	110	110	110	100	....
Manatee	....	......	....	...	....	....	100	100	....	....	100
Marion	....	....	....	....	90	100	90	100	90	100	110
Nassau	....	...	....		60	50	90	75	50	40	100
Orange	....	....	....	....	110	110	100	110	100	110	125
Osceola	....	....	....	...	120	130	100	50	100	40	120
Polk	....	....	......	....	150	125	100	100	150	120	160
Putnam	....	....	....	....	100	75	100	100	....	...	125
St. Johns	....	....	....	....	100	80	100	90	....	....	75
Santa Rosa	...	....	100	100	100	100	100	100	100	100	....
Suwannee	....	.....	....	....	...	..	50	80	..	....	....
Taylor	....	..	....	....	..	....	90	90	...	....	....
Volusia	......	..	....	....	...	......	...	..	100	100	150
Wakulla	......	.	....	....	....	....	100	100	....	. .	... .
Walton	....	....	....	..	....	......	87	100	....	...	....
General averages	95	97	98	95	100	100	92	93	96	90	107

Acreage and Condition of Crops—Continued.

Counties	Lemon Trees	Limes	Grape Fruit Trees	Banan's	Pine Apples	Guavas	Peaches	Grapes
	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition
Alachua	....	......	....	....	....	....	....	....
Baker	....	......	....	....	....	....	100	100
Bradford	....	......	100	100	....	....	100	100
Brevard	120	100	125	90	150	150	....	....
Calhoun	....	......	....	....	....	....	75	100
Clay	....	......	60	....	....	....	100	100
Columbia	....	......	....	....	....	....	100	100
Dade	100	100	105	100	110	100	....	100
DeSoto	110	110	110	100	120	120	100	110
Escambia	..	......	....	....	....	....	....	....
Franklin	....	......	....	....	....	....	100	100
Gadsden	....	......	....	....	....	....	75	100
Hillsboro	85	......	100	....	....	....	90	....
Holmes	....	......	....	....	....	....	80	80
Jackson	....	......	....	....	....	....	50	80
Jefferson	....	......	....	....	....	....	50	85
Lafayette	....	......	....	....	....	....	110	100
Lake	50	......	70	....	100	....	50	100
Lee	100	100	125	95	125	110	....	....
Leon	....	......	....	....	....	....	40	95
Levy	100	......	....	....	....	....	....	....
Madison	....	......	....	....	....	....	....	....
Manatee	100	100	100	100	100	100	95	100
Marion	110	110	110	....	110	....	100	....
Nassau	....	......	....	....	....	....	100	100
Orange	100	100	115	....	115	115	120	100
Osceola	120	120	100	....	110	140	200	100
Polk	100	......	160	....	100	100	160	160
Putnam	125	125	125	....	....	....	90	100
St. Johns	60	......	....	....	....	....	125	125
Santa Rosa	....	......	....	....	....	....	125	100
Suwannee	....	......	....	....	....	....	90	....
Taylor	....	......	....	....	....	....	100	100
Volusia	....	......	....	....	110	....	125	100
Wakulla	....	......	....	....	....	....	90	100
Walton	....	......	....	....	....	....	88	100
Gen'l aver'ge	99	107	107	98	113	110	97	101

DEPARTMENT OF AGRICULTURE.

HON. B. E. McLIN, Com. H. S. ELLIOT, Chief Clerk.

CORRESPONDENTS NOTES.

ALACHUA COUNTY.—Both the stand and condition of crops is above the average at this season of the year; the weather was not cold enough to do any material harm to cotton, and the rains have come at right time to make other crops grow finely; the vegetable crops are good.

BAKER COUNTY.—The stand and condition of cotton are both good; much better than last year; other field crops are not so good, from medium to poor stand, and also condition; the peach crop is very good, and so are the grapes.

BRADFORD COUNTY.—The stand of both field and vegetable crops average fine, and all are growing well; orange and grape fruit trees are growing nicely; the peach and grape crops are also very promising.

COLUMBIA COUNTY.—Cotton and all field crops are growing well; the stand is an unusually good average, and the condition is also fine. The fruit crops are doing well, and the prospect is for a fine crop of peaches and grapes; strawberries and melons are also fine.

DADE COUNTY.—The weather has been a little dry, though not enough to hurt, and all crops are doing well; it is a fine growing season. Fruit trees are doing very will, and a fine crop is expected. Pineapples will make a large and fine crop.

DESOTO COUNTY.—The season has been fairly good after a rather cool spring; the stand of all crops will average up well, and the average condition is good. Fruit trees are in splendid form, with prospects for a large crop all around.

ESCAMBIA COUNTY.—Owing to late hard rain and cold, the stand of some crops is bad, though the average is good; condition of crops will also average good; all field crops are late. There will be about half a crop of peaches.

FRANKLIN COUNTY.—There is a fair stand of crops, and though late they are in gretty good condition.

GADSDEN COUNTY.—Damp and cool spring has caused poor stand of some, and slow growth of all crops, except oats, which look well. There is a better stand of tobacco so far than last year, except that it is about two weeks later in transplating than in 1900.

Holmes County.—The freeze in this section damaged all cotton and some corn, which necessitated the replanting of cotton; it caused many bad stands in corn; all crops are looking very well. Peaches and grapes will make a fair crop.

Jackson County.—Owing to late cold spring and want of rain crops have not done well and grow very slow. Stands are fair, and crops will improve with warmer weather and rains. Peach crop will be about half and melons an average crop.

Jefferson County.—The stand and condition of field crops are both good on an average; watermelons and cantaloupes short about a quarter; the general conditions are satisfactory.

Lake County.—The stand of field and vegetable crops is above the average, and the condition of the crops is also fine; all are looking and doing well. Watermelons never looked better, fruit trees doing finely, pineapples also fine. Vegetable crops are yielding good prices.

Leon County.—There is an increase in cotton acreage of about ten per cent; stands are fairly good with occasional replanting necessary; the nights have been too cold for rapid growth; condition of corn about same as last year, and at present outlook is promising for good crops of all kinds.

Levy County.—Stand of crops generally good, also the conditions are favorable except that all crops are late about two weeks, and bud worms have in some localities injured corn. The melon crops are generally good.

Madison County.—Stands of cotton and corn are fair, but backward on account of the late cold spring, and is growing slow; the oat crop is a very fine one, best for several years; other crops are about the same as above stated; strawberries and melons fine.

Manatee County.—Stand and condition of all field crops is good; vegetable crops are fine, and return of sales satisfactory. Orange and other fruit trees are in excellent condition, and prospects are good for a large crop of oranges this year.

Marion County.—In one or two sections of the county the weather has been dry, and while it is not thought that crops are suffering, rain would do a great deal of good. Good rains are reported in the north, east and western sections of the county. Stands of crops are generally good, and fruit trees are growing well; peach crop good.

Nassau County.—Stands of crops are fairly good, but the cool dry weather has kept them back greatly; late showers which we are now getting will help them, and if they continue crops will come forward and give a fine yield. Orange trees are growing finely, and a good peach crop is promised.

Orange County.—The average stand of crops is very good, some are the best for several years. Vegetable crops are doing well and selling for fair prices; fruits of all kinds doing well, and citrus fruit trees growing finely. Peach crop fine.

Osceola County.—Long continued cool and dry weather made all market crops late except fruit, of which there will be an abundance this year.

Polk County.—Vegetable crops are all a little late, but the prospects are good for the best yield for some years; they were kept back by late spring, but are doing nicely now, and the prospect is good for a fine yield and fair prices. Cantaloupes and tomatoes are exceptionally fine; orange and grape fruit trees looking well and will give big crop of fruit. Truck farmers and fruit growers feeling good over the bright prospects.

Putnam County.—Considering the late cool spring crops generally have very good stand, and are in fair condition. Warm rain will bring them out quick; indications favor good crops all around.

Santa Rosa County—The first planting of cotton was badly hurt by the cold and had to be replanted, consequently the stand is not so good, and the condition is not up to the usual standard; other field crops are doing well. Peaches and grapes promise a good crop of each.

Suwannee County.—The crop is at least one month later than usual; the stands are fairly good, also condition of all crops. Acreage in broom corn has been increased to double that of last year. The factory is running on regular time, is located at Welborn, and bids fair to be a great success; it is turning out good specimens of manufactured material.

Wakulla County.—Stands of cotton are fair, but the crop is late owing to cool backward spring; corn is not very good, and condition is also low. Sugar cane is very good; crops generally are late and of slow growth, and weather very dry.

Walton County.—Stand and condition of cotton is very fair, but late owing to cool spring. Cut worms have done some damage to corn; the season has been generally favorable in most sections of the county. The peach crop promises to be very good.

Explanatory.

The within pamphlet contains the law as now revised concerning fertilizer, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal.

I have given marginal notes of subjects treated in different Sections for convenience.

Special attention is called to the duties of Sheriffs in Section 3 of the Act of 1901.

Manufacturers will please note that they are required to file in *this* office annually their oath of analysis. See Section 5. Parties not having filed same during this year will please comply at once. Blank forms will be furnished upon application to this office.

The present law leaves no longer any doubt as to cotton seed meal being subject to the requirements of a fertilizer as to analysis, tag and stamp tax.

Section 8 of the Act of 1901, specifically explains how to order stamps. On application, I will furnish printed forms in ordering stamps in compliance with the present law. Stamps will be furnished in the folowing denominations of weights, to-wit:

One hundred, one hundred and twenty-five, two hundred and two hundred and fifty pound packages.

Manufacturers will please have their goods conform to these weights, or complements of these weights. To illustrate: A one hundred and a one hundred and twenty-five pound stamp placed on a two hundred and twenty-five pound package will meet the demands of the law. Parties using packages of fractional weights must lose the difference in ordering stamps.

Consumers of the goods herein described will find in Section 9 of the act of 1901 what is required to properly take samples for analysis by the State Chemist. Citizens of the State are entitled to have samples analyzed free of cost.

No consumer should purchase a package of fertilizer or cotton seed meal that does not bear its analysis, plainly printed, and the stamp showing the number of pounds the tax has been paid on. You purchase such goods at your own risk with no guarantee that it is not a fraud. When the guarantee is on the package you can send sample to this office and know if your goods come up to the guarantee. This Department is ready to aid you if you will use the law to protect yourself. I certainly expect the Sheriffs of the different counties in this State to assist in protecting their people as the law requires them to do, in Section 3 of the Act of 1901.

B. E. McLIN,
Commissioner of Agriculture.

Compilation of Laws

RELATING TO

Inspection, Analysis, Manufacture and Sale of Fertilizers, Cotton Seed Meal, etc., in this State.

891. APPOINTMENT OF STATE CHEMIST.—The Governor shall appoint a State Chemist, who shall hold his office for the term of four years, and until his successor is appointed and qualified; he shall be an expert chemist, and have his office at the Capital of the State of Florida, and his duties shall be such as hereinafter provided. The Governor may appoint an assistant to the State Chemist when necessary. Approved June 2, 1893.

904. CHEMIST TO REPORT TO GOVERNOR.—The State Chemist shall make quarterly reports to the Governor of the number of certificates rendered by him to the Commissioner of Agriculture. (Revised Statutes.)

908. ANNUAL REPORTS TO GOVERNOR.—He shall also make a report of the operations of his office to the Governor of the State annually, giving the number of analyses made, the amount and proceeds of his office, said report to be presented to the Legislature at its bi-ennial sessions in the same manner as the Auditor's and State Treasurer's reports are made. (Revised Statutes.)

909. PENALTY FOR FALSE ANALYSIS.—In case the State Chemist wilfully makes any false or untrue analysis, he shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in a sum not exceeding one thousand dollars ($1,000), and shall stand committed until such fine is paid. (Revised Statutes.)

910. COMPENSATION OF CHEMIST AND ASSISTANT.—The State Chemist shall receive a salary of two thousand dollars ($2,000) per annum; the Assistant Chemist, who shall be also Fertilizer Inspector, shall be paid eighteen hundred dollars ($1,800) per annum. (Act of June 2, 1893.)

Act of Legislature of 1901, Approved May 22, 1901.

AN ACT to Provide for the Inspection and Analysis of and to Regulate the Sale of Commercial Fertilizers, Manurial Chemicals, Cotton Seed Meal, Castor Pomace, Tobacco Stems, Tobacco Dust or Tobacco Meal, in this State; to Prohibit the Sale of Fraudulent or Adulterated Commercial Fertilizers, Manurial Chemicals, Cotton Seed Meal, Castor Pomace, Tobacco Stems, Tobacco Dust or Tobacco Meal; to Fix Penalties for the Violations of the Provisions of this Act, and to Provide for the Collection of a License or Inspection Fee from the Manufacturers or Dealers in Commercial Fertilizers, Manurial Chemicals, Coton Seed Meal, Tobacco Stems, Tobacco Dust or Tobacco Meal, and to Repeal All Laws or Parts of Laws in Conflict with this Act.

Be it Enacted by the Legislature of the State of Florida:

Powers given to inspect under supervision of the Commissioner of Agriculture.

Section 1. The State Chemist and the Assistant Sate Chemist shall be Inspectors of Fertilizers; they shall be under the general direction and supervision of the Commissioner of Agriculture.

Duties of State Chemist.

Sec. 2. It shall be the duty of the State Chemist to analyze samples of fertilizers that may be offered for sale in this State, and for this purpose he is authorized and directed to take or have taken by the Assistant State Chemist from any brand of fertilizers offered for sale in this State, from not less than ten original packages of said fertilizers which may be in the possession of any manufacturers, dealer or person using the same, two samples not to exceed one pound each in weight, one sample to be returned by the State Chemist and the other sample to be sent in a sealed bottle or can, to the Commissioner of Agriculture, who shall keep the same. And in case any manufacturer shall request another analysis, then the sample retained by the Commissioner of Agriculture, at the request of any manufacturer, shall be sent to any Chemist to whom the Commissioner of Agriculture, State Chemist and manufacturer shall agree upon.

Rights of manufacturer to second analysis.

Requirements of analysis to be on packages.

Sec. 3. Every bag, barrel, or other package of commercial fertilizers, cotton seed meal, castor pomace, tobacco stems, tobacco dust, or tobacco meal manufactured, sold in, or imported into this State, shall have securely attached or labeled, and plainly stamped thereon the number of net pounds of fertilizer in the package, the name, brand or trade mark under which the fertilizer is sold, the name and address of the manufacturer and the chemical analysis, stating the percentage of ammonia, and the source from which the same is derived, the percentage of potash soluble in water, the percentage of available phosphoric acid and the percentage of insoluble phosphoric acid, the percentage of moisture contained therein, also the maximum percentage of chlorine therein, and all other ingredients from which it is compounded, also the stamp showing the payment of the license fee provided for in this act.

Duties of Sheriffs.

The Sheriffs of the counties of this State are hereby authorized, and it is hereby made their duty to seize and sell at public sale, each and every bag, barrel or package of commercial fertilizer, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal manufactured, imported into or sold in this State, which shall not have securely attached the tag or label and stamp mentioned in this Section; Provided, That should the owner show to the satisfaction of the Sheriff that such tag or label or stamp had been attached and the same had become detached, the Sheriff shall release the same without cost to the owner.

Cannot ship in bulk to consumers.

Manufacturers can ship in bulk to each other.

All fertilizer shipped in bulk to the consumers shall be subject to penalties provided for in this Section upon the attempt to evade the payment of such tax; Provided, That nothing in this act shall be construed to restrict or avoid sales of acid phosphate, kainit or other fertilizer material in bulk to each other by importers, manufacturers or manipulators who mix fertilizer material for sale, or as preventing the free and unrestricted shipment of these articles in bulk to manufacturers or manipulators who mix fertilizer material for sale. All moneys or proceeds derived from the seizure and sale of fertilizers shall be covered into the State treasury.

Penalties for misrepresenting true analysis.

Sec. 4. Any manufacturer or dealer who shall misrepresent the proportion of ammonia and the source thereof, phosphoric acid and potash, or other ingredients contained in such fertilizers, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined five hundred dollars for the first offense and one thousand dollars for each subsequent offense.

Oath of analysis to be filed with Commissioner of Agriculture annually.

Sec. 5. Any manufacturer or importer of or agent for the sale of commercial fertilizers, previous to offering the same for sale in this State, shall file with the Commissioner of Agriculture annually a paper giving the name of his principal agent or agents in the State of Florida, also the name and guaranteed analysis, under oath, of the gertilizer or fertilizers offered for sale by him, and any manufacturer, importer or agent who shall refuse to give the information herein required shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined five hundred dollars for each offense.

Penalty for non-payment of tax.

Sec. 6. Every manufacturer, importer, agent or seller of any commercial fertilizer, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal, shall pay to the State Treasurer a fee of twenty-five cents for each and every ton offered for sale in this State; Provided, That when the manufacturer or importer shall have paid the fees herein required for any person acting as agent or seller for any manufacturer or importer, such agent or seller shall not be required to pay the fee named in this Section; and any manufacturer, importer or dealer, who shall fail to pay the tax provided in this Section shall be guilty of a misdemeanor, and upon conviction thereof shall be fined one hundred and fifty dollars for the first offense and two hundred and fifty dollars for each subsequent offense.

Stamps furnshed by Commissioner of Agriculture.

Sec. 7. It shall be the duty of the Commissioner of Agriculture to furnish the manufacturers, importers or dealers with stamps or labels to be attached by the manufacturers to each package of fertilizer sold or used in this State, which stamp or label shall be accounted for by the Commissioner of Agriculture in his monthly reports to the Governor; such stamps shall be printed in such form as may be prescribed by the said Commissioner of Agriculture.

How to apply for stamps.

Sec. 8. Each manufacturer and importer of or dealer in fertilizers, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal, shall forward the money for fertilizer stamps or labels with his letter of request, directed to the State Treasurer. Said letter of request shall contain the statement of tons of fertilizers for which stamps or labels are required and the number of packages contained in each ton. The State Treasurer shall hand to the Commissioner of Agriculture the letter of request for fertilizer stamps or labels, which order shall be filled by the Commissioner at once, if found correct.

How citizens may apply to have goods analyzed.

Sec. 9. Any person purchasing any fertilizer from any manufacturer or vendor in this State for his own use, such person being a citizen of this State, may submit fair samples of said fertilizer to the Commissioner of Agriculture for analysis. But in order to protect the manufacturer or vendor from the submission of analysis of spurious samples, the person selecting the same shall do so in the presence of two or more disinterested persons, which samples shall be taken from one or more packages and bottled, corked and sealed in the presence of said witnesses, and this sample package or bottle placed in the hands of a disinterested person, who shall forward the same, at the expense of the purchaser, to the Commissioner of Agriculture when the person so desires; and upon the receipt by him of any such sample package, the Commissioner of Agriculture is hereby authorized to require the State Chemist to analyze the same, and he shall return to such purchaser or purchasers a certificate or certificates of analysis. The certificate shall in all cases set forth the component parts of said fertilizers, with their respective qualities, date of analysis and name or names of persons submitting the samples, and to be signed bv the State Chemist, who is hereby required to keep an accurate account of the same, and the said certificate or record, when verified by the affidavit of the State Chemist, shall be competent evidence in any court of law or equity in this State.

Damages, how recovered.

Sec. 10. Any person purchasing any fertilizer or fertilizing material from any manufacturer or vendor who shall upon an analysis by the State Chemist, discover that he has been defrauded, by reason of adulteration or deficiencies of constituent elements, either in quality or quantity, in the fertilizing materials so purchased, shall recover in any action he may institute, upon proof of the fact, twice the amount paid to or demanded by the manufacturer or vendor for the fertilizer or fertilizing material so purchased. But in all cases where the vendor is an agent of the manufacturer, or subagent of such agent, the judgment of the court shall be rendered against the manufacturer. In case any purchase be made of any manufacturer or agent of any person or persons residing out of the State of Florida, manufacturing, compounding or furnishing for sale, any such commercial manure or manufactured fertilizer, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal, the purchaser thereof, may, at his option, proceed by attachment, as now provided by law, in case of non-resident and absconding debtors, against any such property, rights or credits of any person or persons selling, manufacturing, compounding or furnishing said manures or fertilizers, when such property, rights or credits can be found within the limits of the State.

Definition of materials subject to this act.

Sec. 11. The term commercial fertilizers as used in this act, shall be taken to mean all substances containing nitrogen, potash, or phosphoric acid; also cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal, sold, offered or exposed for sale and ordinarily used for manurial purposes, excepting barnyard or stable manure and crude cotton seed.

Materials not allowed sold except under these conditions.

Sec. 12. No person shall sell or expose for sale in this State any pulverized leather, hair or wool waste, raw, steamed, roasted or in any form as a fertilizer or as an ingredient of any fertilizer or manure, without an explicit printed certificate of the fact, said certificate shall be conspicuously affixed to every package of fertilizer or manure, and to accompany or go with every parcel or lot of the same. A failure to comply with the provisions of this Section shall be deemed a misdemeanor, and upon conviction the seller thereof shall be fined one hundred dollars for the first offense and two hundred dollars for each subsequent offense.

What the State Chemist is required to furnish analysis of.

Sec. 13. The State Chemist, upon application, shall furnish at any time to an applicant a full analysis of any brand of fertilizer required. Said analysis shall set forth the percentage of ammonia, potash soluble in water, of available and insoluble phosphoric acid, with the statement of the commercial value of each ingredient, which valuation shall be uniform and not above the real value of such ingredient.

Traveling expenses paid.

Sec. 14. The actual traveling expenses of the State Chemist and his assistant incurred in the execution of this law and inspection of fertilizers, shall be paid on proper vouchers approved by the Commissioner of Agriculture; Provided, Such expenses shall not exceed $750.00 per annum, and the Comptroller is hereby authorized to issue his warrant for the payment of the same out of any funds in the Treasurer's hands derived from the sale of fertilizer inspection tags or stamps.

Commissioner of Agriculture has power to regulate.

Sec. 15. The Commissioner of Agriculture shall have the authority to establish such rules and regulations in regard to the inspection, analysis and sale of fertilizers, chemicals and cotton seed meal not inconsistent with the provisions of this act, as in his judgment will best carry out the requirements thereof.

Sec. 16. All laws and parts of laws in conflict with this act are hereby repealed.

Sec. 17. That this act shall take effect immediately after its passage and approval by the Governor.

Approved May 22, 1901.

UNITED STATES DEPARTMENT OF AGRICULTURE.

Climate and Crop Service of the Weather Bureau—Florida Section.

A. J. MITCHELL, SECTION DIRECTOR, JACKSONVILLE, FLA.

Climatological Data for April, 1901.

Stations	Counties	Elevation, feet	Length of record years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days	
NORTHERN SECTION.																		
Archer	Alachua	92	17	65.5	—2 5	88	2	43	21	37	2.80	—0.27	1.90	5	21	8	1	sw
Bainbridge	Decatur, Ga	119	9	....	.....	.	.....	...	..	...	......	......	......	....	.	....	..	......
Federal Point	St. Johns	10	5	...	..	..	.....	...	...	..	......	......	......	...	...	....	..	.....
Fernandina	Nassau	....	....	..	....	..	..	...	...	....	......	....	....	...	...	...	....	......
Fort George†	Duval	..	14	64 8	—3 4	78	2	50	20	..	......	......	......	.	....	...	..	se
Gainesville....a	Alachua	175	15	65.3	—2 4	88	3	41	22	37	1 60	—1 75	0 95	6	23	4	3	......
Huntington	Putnam	50	3	63.4	—4 0	88	2	35	22	37	1 02	—1 70	0 61	6	22	7	1	ne
Jacksonville	Duval	43	29	63.2	—5 0	85	2	45	21	28	1 08	—1 88	0 47	4	19	5	6	w
Jasper	Hamilton	165	2	62 9	—2 3	83	2	41	22	31	3 74	+0 92	2 75	4	......	...	....	......
Lake Butler..d	Bradford	...	4	62.8	—4 3	88	29	41	4*	42	2 05	—0 39	0 75	5	....	......	....	......
Lake City	Columbia	201	13	63.8	—5 0	84	2*	39	22	34	1 83	—1 28	1 55	3	19	6	5	w
Macclenny	Baker	140	4	62.8	—4 4	86	2	37	22	42	1 70	—1 75	1 06	3	26	4	0	e
McAlpin....j	Suwannee	...	......	63.9	.....	86	16*	39	22	35	2 40	......	1 35	3	22	5	3	......
Micanopy	Alachua	...	7	65.1	—5 4	89	2	40	22	41	1 95	—0 09	1 10	2	.	..	....	......
Middleburg	Clay	...	1	61.2	....	88	2	34	22	40	1 09	......	0 63	3	23	1	6	nw

Climatological Data for April—(Continued.)

Stations	Counties	Elevation, feet	Length of record, years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days.	
Savannah, Ga.	Chatham, Ga.	36	30	60.6	—5 0	78	30	44	4	2	1 91	—1 46	1 12	6	15	7	8	w
St. Augustine	St. Johns	10	52	...	.....	..	....	..	...	....	0 94	—1 76	0 68	2	....	.. .	......	......
Sumner	Levy	......	10	63.2	—3 6	84	27*	36	22	4	2 99	+0 07	1 70	4	22	6	2	nw
Switzerland ..e	St. Johns	....	3	62.9	—2 4	81	3*	42	22	33	4 48	—1 97	4 15	4	....	....	...	......
Thomasville, Ga.	Thomas, Ga.	330	23	62.0	—6 2	83	30	41	4	33	2 83	—0 91	1 62	5	..	....	....	......
Waycross, Ga.	Ware, Ga.	131	19	61.2	—8 5	83	2	39	22	32	1 49	—0 54	0 78	5	...	......	....	......
	Means	....	....	63.6	—3 7	..	......	...	...	....	2 12	—0 09	......	4	22	5	3	w-nw
CENTRAL SECTION.																		
Bartow	Polk	...	5	66 4	—3 6	89	1*	43	22	38		—0 14	2 08	4	20	10	0	w
Brooksville	Hernando	328	7	65 1	—4 1	86	1	46	20	32	1 33	—1 33	0 90	2	26	2	2	w
Clermont	Lake	..	7	67 8	—3 9	92	1	47	19	32	2 36	+0 44	2 00	2	23	7	0	nw
DeLand	Volusia	..	1	62 5	....	88	2	35	11	40	......	.....	......	....	...	...	....	......
Earnestville	Pasco	193	5	67 6	—3 0	91	2	43	21	36	1 80	—1 14	1 05	4	25	4	1	w
Eustis	Lake	180	9	68 0	—2 4	90	2	47	22	33	0 92	—1 23	0 45	6	11	15	4	w
Ft. Meade	Polk	125	16	66 8	—1 8	90	3	44	5*	42	2 05	—0 05	2 05	1	28	2	0	w
Fort Pierce	Brevard	....	...	67 4	—5 1	89	2	43	22	36	1 33	—1 26	1 25	2	22	5	3	ne
Inverness	Citrus	......	1	64 4	....	87	2	39	21	35	1 74	—2 20	0 97	5	18	10	2	w
Kissimmee	Osceola	65	8	65 6	—5 9	87	2	44	10	38	3 23	+2 01	2 91	3	...	....	....	......
Merritt's Island	Brevard	20	18	68 2	—3 6	86	1*	51	21*	24	2 17	—0 90	2 08	3	29	0	1	w
New Smyrna	Volusia	20	14	64 4	—5 8	90	1*	39	22	43	0 80	—1 14	0 80	1	....	....	....	ne
Ocala	Marion	150	11	64 8	—4 2	89	2	41	22	36	1 08	—1 06	0 55	4	21	6	3	ne
Orange City	Volusia	50	9	64 1	—5 7	89	2	38	22	49	1 05	—0 94	0 76	3	22	7	1	se
Orlando	Orange	98	8	66 8	—3 2	88	1	46	22	29	2 47	+0 32	2 20	2	25	4	1	w

Plant City	Hillsborough	121	7	65 0	—5 0	88	1*	38	21*	43	1 37	—1 55	0 93	5	22	7	1	w
Rockwell b	Marion	...	1	66 1	...	88	16	40	22	38	1 52	......	0 70	3	...	....	.	w
Sebastian d	Brevard	36	3	67 3	—2 3	87	3	46	20	27	1 41	+0 21	1 40	2	....	....	..	......
St. Francis	Lake	20	4	62 2	—4 3	90	1	33	22	40	0 95	—0 90	0 61	3	27	3	0	w
Tampa	Hillsborough	20	11	66 6	—5 0	84	1	50	21	27	1 63	—0 54	0 98	5	19	9	2	w
Tarpon Springs	Hillsborough	20	16	...	...	..	....	..	...	....	....	......	......	...	.....	....	....	......
Titusville	Brevard	...	......	65 3	—5 7	86	2	44	21	33	1 54	—0 91	1 53	2	16	8	6	w
	Means	...	....	65 8	—4 1	..	...	...	....	....	1 65	—0 65	......	3	22	6	2	w
SOUTHERN SECTION.																		
Flamingo	Monroe	....	....	70 2	...	90	5*	50	8*	29	2 68	.....	1 46	4	25	1	4	se
Havana	Cuba	57	10	72 0	—4 0	88	1	56	5	23	0 55	—2 23	0 46	3	18	11	1	n
Hypoluxo	Dade	...	4	70 3	—1 3	90	1	46	22	32	2 43	—0 06	1 15	6	...	..	...	......
Jupiter	Dade	28	13	69 0	—3 0	84	6	51	21	25	2 13	—0 70	1 36	5	15	12	3	w
Key West	Monroe	22	30	71 9	—4 0	82	2	64	21	10	0 46	—0 76	0 45	2	19	9	1	nw
Manatee	Manatee	16	18	66 1	—4 3	91	1	43	30	39	2 37	+0 27	1 43	4	24	5	2	nw
Marco	Lee	.....	....	69 4	..	89	1	53	5	27	1 50	......	0 68	3	27	3	0	w
Miami	Dade	....	...	70 1	—2 8	89	6	46	22	32	1 97	—1 61	0 90	3	..	....	....	.....
Myers	Lee	....	15	68 2	—3 9	87	2	46	22	32	1 89	—0 74	1 34	2	29	0	1	w
Nassau	N. P. Bahamas	....	......	73 4	.....	88	1*	60	22*	22	1 40	......	1 36	2	......	....	..	.....
Nocatee	DeSoto	....	1	67 2	...	90	1	44	4	37	2 50	......	2 00	5	24	0	6	......
San Juan	Puerto Rico	82	......	78 6	+2 0	90	30	70	1	17	1 11	—2 55	.....	9	20	10	0	se
	Means	...	...	69 2	—3 2	..	...	...	..	...	1 99	—0 60	......	4	23	5	2	w
WESTERN SECTION.																		
Carrabelle	Franklin	12	4	63 0	—2 9	78	24	43	21	24	5 51	+2 94	3 36	3	13	13	4	w
Daphne e	Baldwin, Ala	......	...	60 9	—6 7	86	30	40	4	35	6 62	+3 41	3 90	5	19	3	6	sw
DeFuniak Springs	Walton	193	3	62 8	—1 6	87	30	36	27	37	6 16	+1 36	2 30	5	14	11	5	......
Marianna	Jackson	...	1	62 3	....	83	11*	42	3*	33	2 93	......	1 77	4	...	....	....	nw
Mobile	Mobile, Ala	35	30	63 2	—5 0	85	30	43	3	28	7 79	+3 10	3 52	8	16	9	5	nw
Montgomery	Montgom'y, Ala	219	28	60 4	—5 0	86	30	41	22	33	6 05	+1 25	3 31	6	12	11	7	nw
Monticello	Jefferson	....	....	....	......	..	...	...	....	....	....	......	......	......	....	....	....	......

Climatological Data for April, 1901—Continued.

Statians	Counties	Elevation, feet	Length of record, years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days	
Newton	Dale, Ala.	....	...	...	....	..	..	..	....	..	...	......	......	......		...	....	......
Pensacola	Escambia	56	21	63 2	—4 0	84	30	45	19	24	7 45	+4 09	3 25	6	21	3	6	nw
Quincy	Gadsden	...	....	61 6	.....	85	15*	37	20	38	2 00	......	1 60	2	15	11	4	......
St. Andrews Bay	Washington	....	3	62 4	+0 3	84	30	44	4	38	2 88	+1 14	2 10	4	26	3	1	sw
Stephensville†	Taylor	....	2	61 1	—1 3	85	10	40	12*	....	2 00	—0 60	1 50	2	22	4	4	sw
Tallahassee	Leon	193	15	62 2	—4 7	79	2*	40	21*	28	2 72	—0 27	1 25	4	24	5	1	n
Wausau d	Washington	250	3	62 4	—2 1	84	17*	37	21	37	5 02	+1 46	2 40	3	..	......	...	....
Wewahitchka	Calhoun	....	....	62 6	.....	86	12	35	20	35	3 44	......	2 00	4	21	1	8	n-s
	Means	....	...	62 4	—2 3	..	.....	...	...	....	3 91	—1 45	......	4	20	6	4	nw-sw
MARCH, 1901.	State Means	......	....	65 2	—4 2	..	..	...	..	....	2 26	—0 27	......	4	22	6	2	w
Brooksville	....	..	....	62 6	—2 7	86	19*	30	7	39	4 38	+2 01	1 45	6	25	5	1	w

†Thermometers are not self-registering and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily.

*More than one day. ‡Weather Bureau.

¶Not used in obtaining means.

All records, except stations outside of the State, are used in determining State or district means, but State and district departures are determined by comparison of current data of only such stations as have normals.

a, b, c, etc., following name of station, indicate number of days missing from report.

SALIENT CLIMATIC FEATURES.

FOR APRIL, 1901.

ATMOSPHERIC PRESSURE.

The mean pressure for the month was 30.00 inches, which is below normal. The highest observed pressure was 30.37 inches, at Pensacola on the 28th; the lowest observed pressure was 29.59 inches, at Pensacola on the 18th; monthly range for the State was 0.78 inch.

TEMPERATURE.

(Degrees Fahrenheit.)

The monthly mean temperature for the State was 65.2°, 4.2° below normal. By sections, the means were: Northern, 63.6°; Central 65.8°; Southern, 69.2°; Western, 62.4°. The highest monthly mean temperature was 71.9°, at Key West; the lowest monthly mean temperature was 61.1°, at Stephensville. The highest temperature during the month was 92°, at Clermont on the 1st; the lowest temperature was 33°, at St. Francis on the 22d; absolute range for the State was 59°.

PRECIPITATION.

(Inches and hundredths.)

The average precipitation for the State during the month was 2.26 inches, 0.27 inch below normal amount. By sections, the averages were: Northern, 2.12 inches; Central, 1.65 inches; Southern, 1.99 inches; Western, 3.91 inches. The greatest monthly amount was 7.45 inches, at Pensacola; the least was 0.46 inch, at Key West. The greatest amount for any twenty-four hours was 4.15 inches, at Switzerland on the 18th.

WIND AND WEATHER.

The prevailing winds during the month were from the west. By sections, there were: Northern, 22 clear days; 5 partly cloudy; 3 cloudy Central, 22 clear; 6 partly cloudy; 2 cloudy. Southern, 23 clear; 5 partly cloudy; 2 cloudy. Western, 20 clear; 6 partly cloudy; 4 cloudy.

Rainy days: Northern section, 4; Central, 3; Southern, 4; Western, 4.

MISCELLANEOUS PHENOMENA.

(Dates of.)

Fog, Light.– Carrabelle, 1; Eustis, 26; Wewahitchka, 21, 27, 28, 30.

Fog, Heavy.—Manatee, 1.

Frost, Light.—Carrabelle, 21; Eustis, 22, 23; Jacksonville, 21, 22; Gainesville, 22; Middleburg, 22; Ocala, 22: Wewahitchka, 20.

Hail.—Flamingo, 30.

Halos, Lunar.—Jacksonville, 29; Middleburg, 4.29.

Halos, Solar.—Earnestville, 15, 17, 18.

Thunderstorms—Flamingo, 13, 18; Fort Meade, 18; Gainesville, 18; Georgiana, 29, 30; Middleburg, 2, 19, 20; Myers, 13, 18, 30; Orlando, 19; Wewahitchka, 2, 17.

Winds, High.—Carrabelle, 11; Eustis, 1, 2, 3, 4; Fort Meade, 18, 19, 20; Manatee, 19; Myers, 18; Middleburg, 13, 17, 19, 20; Rockwell, 2, 3; Sumner, 6, 13, 14, 20, 21, 22; Wewahitchka, 2, 17, 19, 20.

COMPARATIVE TEMPERATURE AND RAINFALL DATA FOR APRIL, DURING THE PAST TEN YEARS.

Year.	Mean Temperature.	Average Rainfall. Inches and hundredths.
1892	71.3	0.87
1893	72.7	2.17
1894	70.0	1.03
1895	68.4	4.75
1896	71.0	0.50
1897	70.2	4.44
1898	67.0	1.39
1899	67.7	3.40
1990	70.0	4.49
1901	65.2	2.26

The normal temperature for April is 69.4°; the average rainfall is 2.53 inches.

PRESSURE AND WIND TABLE.

Stations	Atmospheric Pressure					Wind Velocity. in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville	30.00	30.36	28	29.64	19	7,305	42	se	19	99	26	64
Jupiter.	30.01	30.21	28	29.83	19	8,767	35	nw	19	95	52	70
Key West	29.98	30.22	28	29.67	19	8,452	40	se	19	95	35	68
Pensacola	*30.04	30.37	28	29.59	18	8.004	36	se	12	98	37	67
Tampa	30.00	30 30	28	29.73	19	5.867	37	se	13	99	38	67

*8 a. m. readings only.

[NOTE.—Fertilizer Table left out of this Issue for Revision.—Editor.]

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Vol. 11. No. 71.

FLORIDA

(Department of Agriculture.)

..Monthly Bulletin..

SEPTEMBER, 1901.

B. E. McLIN, Commissioner of Agriculture,
TALLAHASSEE, FLA.

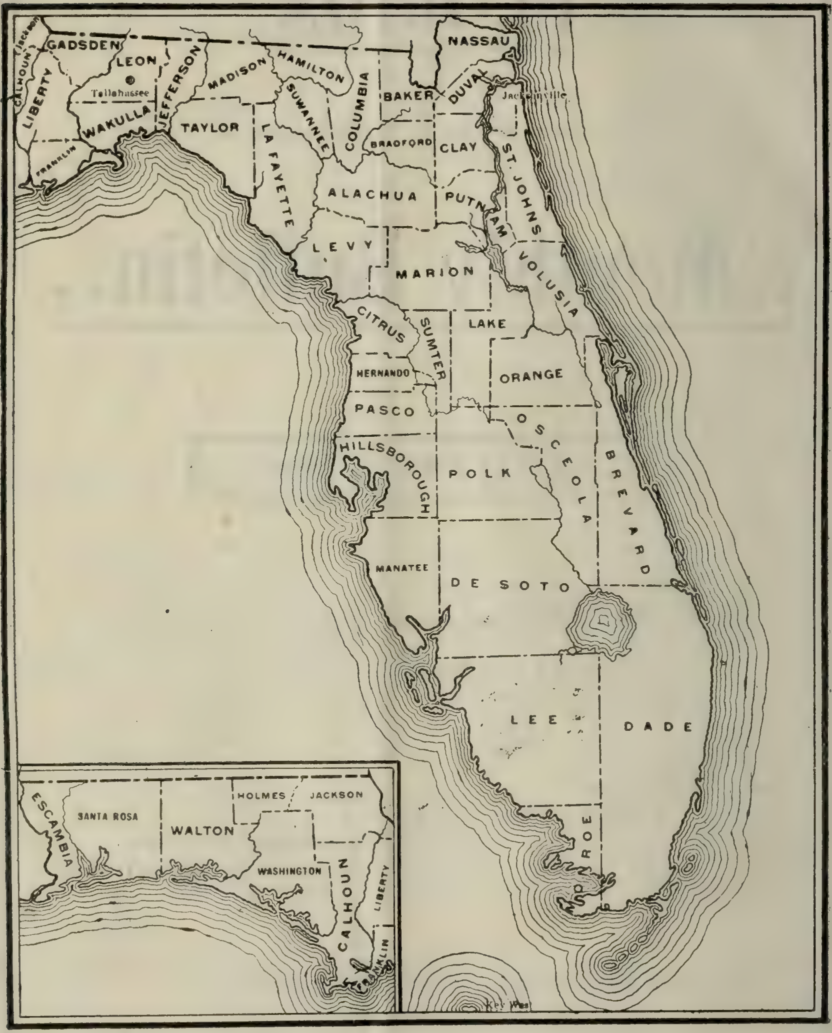
Part I. Crops.
Part II. Fertilizers.
Part III. Weather Report.
Part IV. Miscellaneous.

These Bulletins are furnished free to those requesting them . . .

TALLAHASSEEAN BOOK AND JOB OFFICE, TALLAHASSEE, FLA.

County Map of the State of Florida.

(For the Bulletin.)



DEPARTMENT OF AGRICULTURE.

Hon. B. E. McLin, Com. H. S. Elliot, Chief Clerk

CORRESPONDENTS' NOTES.

Alachua County—Cotton has regained nothing of the loss; it will be considerably short of an average. Sugar cane, field peas and vevet beans making a fine crop. Hay and potatoes are making fine average crops; orange trees doing well. Fine weather for saving hay and a good supply is being harvesed

Baker County—Cotton crop is very short, fully twenty-five per cent. short of the average crop. Sugar cane, rice and velvet beans will make fine crops; sweet potatoes only medium, and all other crops more or less short.

Bradford County—We have had so much rain that cotton will yield little more than half as much as last year. Too wet also for sweet potatoes; sugar cane generally good and doing well; corn not more than half a crop. More hay is housed than ever before. Rice and velvet beans also very fine crops.

Brevard County—Seasons are good this year; we have had no storm and all crops are good. Pineapples are more promising than for years past; weather fine and cool, and general good health prevailing; live stock, hogs and cattle are healthy and the range is fine.

Calhoun County—Cotton is very short, and so injured that it will not be able to recover much if any. Sugar cane, rice and sweet potatoes will make fine crops, also hay. Orange trees in this section are too young to bear much fruit yet, though they are growing rapidly, with prospects for fine groves in the near future; also the same can be said of grape fruit.

Citrus County—In some sections of the county the stand of sugar cane was very poor, but there will be an average crop, with an increased acreage. Other field crops are very good. Oranges doing remarkably well.

Columbia County—The cotton crop will be quite short, a great many bolls died on stalk when about half grown. A kind of rust or blight appeared on cotton about September 1st, which spread very rapidly, doing much damage, as above stated. The hay crop is good, but the rains have prevented the harvest, and causing some farmers to lose much of what they cut; the rains have also cut short the sweet potato crop. Live stock generally in fair condition.

DADE COUNTY—The seasons have been the most favorable for all crops that we have had for several years; crops are good, and the fruit trees are thriving the very best, a good crop of all kinds of fruit.

DESOTO COUNTY—This has been a good year for crops and fruits of all sorts; we have had no extreme of either drouth or flood, thus making conditions favorable for growing everything in season. Preparations are beginning for fall vegetable planting.

ESCAMBIA COUNTY—The cotton crop was damaged about half by the August storm, and heaps of rotten corn in the field, caused by the hot wind on the 12th of August. Crops are not going to be as good as believed at one time. Hay is very fine, and so is the sweet potato crop.

FRANKLIN COUNTY—All the crops that are planted in this county are in fine condition, and bid fair to make a successful yield. No cotton is grown in the county.

GADSDEN COUNTY—Upland cotton is short of last year in yield about 30 per cent.; sea island is in much better condition, and prospect for yield is better, but it is also short. Potatoes and peanuts are unusually good, and field peas, rice and hay are a fair average.

HERNANDO COUNTY—Field crops are generally good over the county, the average will be much better than last year. Fruit trees are coming on rapidly.

HOLMES COUNTY—Weather warm and conditions for gathering the crops are fine; nearly all are gathered except cane and potatoes, and all are more or less short, with one or two exceptions.

JACKSON COUNTY—The top crop of cotton has been eaten by the caterpillar; corn crop is poor because of drought; sugar cane and sweet potato crops fair; hay and peanuts fine, and worth more to the farmer than for years before. Peas, rice and velvet beans will make fine crops.

JEFFERSON COUNTY—Cotton crop is very short, in fact, all crops are much short of usual average.

LAFAYETTE COUNTY—Sea island cotton crop very short, will hardly yield more than half a crop. All the other field crops are a good average.

LAKE COUNTY—With the exception of field peas, the field crops in the county will average up well. Fruit trees are growing well.

LEE COUNTY—We have had rather too much rain for sweet potatoes to make full crop, but all other field crops are fine, and fruit trees and fruit are in excellent condition; there will be a fine crop of fruit.

LEON COUNTY—The cotton crop of this county will be from 20 per cent to 25 per cent. short of last year, and 10 to 15 per cent. short of an average crop; corn is considerably short; hay will yield probably the largest crop ever cut in the county. Sweet potatoes are about 25 per cent. short, owing to too much rain; sugar cane and other crops are very good.

LEVY COUNTY—Both kinds of cotton are short in the county; provision crops will average well; velvet beans and hay are the best for several years.

MADISON COUNTY—Caterpillars are badly injuring the top and middle crops of cotton, which will cut the yield down to almost if not quite one-half; the provision crops are all very good, except sweet potatoes, the crop will be short; too much rain.

MANATEE COUNTY—Everything is very much the same as usual; very heavy rains during last of September drowned out all young crops, but there were not many of them. The main food crops have done well, and the fruit trees and fruit are in fine condition; there will be a very fine crop of fruit this season.

NASSAU COUNTY—Sugar cane is doing well, the dry weather in first part of season kept it back, but plenty of rain since will give a fair crop; sweet potatoes are looking well, but dry weather will make them late in maturing; hay is short on account of drought, but with plenty of rain crops will average well. Orange, lemon and other citrus fruit trees are looking fine.

ORANGE COUNTY—Crops of all sorts are generally very good; fruit trees are growing rapidly and looking fine. Live stock of all kinds in good condition.

OSCEOLA COUNTY—The crops of this county are in a very fine average condition; the yield of a number of them will be above the average. The fruit trees are in fine shape, and a good crop will be gathered.

PASCO COUNTY—This has been an exceptionally fine season for all crops raised in this county. Tobacco has done unusually well. Orange, lemon, lime and grape fruit trees have made the finest growth since 1894 and '95; a large acreage will be planted in this county the coming winter. Strawberries, which is the principal money crop at present in this section, have done better than for several seasons. Other crops good.

POLK COUNTY—Heavy rains have injured sweet potatoes some, but no other crop; the hay crop is fine, nearly all has been cut and housed; cassava, velvet beans and sugar cane are all in fine condition. Orange and lemon trees also in fine condition, and the prospects bright for a good yield.

PUTNAM COUNTY—All crops except cotton are in a very fair average condition, and promise good average yields; the hay crop is fine and about 75 per cent. of it is now saved. Fruit trees are looking well.

SANTA ROSA COUNTY—Considering the unfavorable season, storm and drought, the crops of this county are doing very well, and will show up fair returns. Some crops are very good, but a few have been injured by too much rain or by drought. Farmers will have enough to carry them through.

SUWANNEE COUNTY—The cotton crop has fallen off in this county very materially, and corn is also short, but other crops will make a good average yield. Owing to inferior seed, the straw of the broom corn is not quite as good as last season, but our peope can make it to perfection without a doubt. Rice crop promises a good yield; the mill is running and will continue through the season on full time.

TAYLOR COUNTY—The cotton crop in this county is very short, and will hardly make much more than half a crop; the seasons have generally been unfavorable for most crops, and none of them are up to the usual average.

VOLUSIA COUNTY—Crops such as are grown in the county are in good condition, and will average a good yield. Fruit trees are doing well, and some good fruit will be had in some sections of the county.

WALTON COUNTY—Except cotton, which is quite short, there will be a good average yield of crops in the county, as most of the food crops are in fairly good condition. It is generally considered that there will be a considerable increase in acreage of all crops for another year, specially velvet beans, peas, sugar cane and corn.

WASHINGTON COUNTY—The cotton crop is fairly good, and the standard crops are nearly all up to a good average; velvet beans, peanuts, cassava and hay are specially good crops; there is a very large crop of hay being saved, and farmers will have plenty to go through the winter and spring on.

Condition and Prospective Yield of Crops for September, 1901, compared with an average.

Counties	Upland Cotton		Sea Island Cotton		Sugar Cane		Field Peas		Rice		Velvet Beans	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	....	....	60	70	100	100	90	100	70	75	100	100
Baker	....	......	50	50	90	90	75	75	100	100	100	100
Bradford	...	....	60	60	100	110	100	50	100	120	100	140
Brevard	...	....		....	120	120	100	100	100	100	....	...
Calhoun	60	60	80	80	100	100	75	80	100	100	..	....
Citrus	...	....	....	...	80	100	100	100	100	100	100	100
Clay	......	....	100	95	100	100	100	110	100	100	110	120
Columbia	....	......	90	80	95	95	100	100	105	105	105	110
Dade	..	..	....	......		..	100	100	....	....	....	......
DeSoto	....	.....	..	...	105	120	100	100	110	105	100	110
Escambia	75	75	..	....	100	150	100	100	100	100	100	150
Franklin	...	....	..	....	90	85	90	90	....	....	90	90
Gadsden	80	65	90	90	80	90	100	100	100	100	...	...
Hernando	..	......	....	...	80	80	100	90	75	100	100	100
Hillsborough	....	....	....	...	75	80	100	100	....	....	100	200
Holmes	90	85	100	80	95	100	95	100	90	90	100	120
Jackson	50	60	75	75	90	90	100	100	100	100	100	100
Jefferson	60	60	75	75	80	85	60	50		....	.	....
LaFayette	....	..	65	50	100	100	90	80	120	100	140	150
Lake	...	...	....	....	100	100	50	50	...	..	100	100
Lee	....	....	....	....	100	100	100	100	90	90	100	100
Leon	70	75	..	....	100	110	100	95	100	100	100	110
Levy	80	80	70	70	90	85	100	100	100	100	100	115
Madison	50	50	60	60	100	100	100	100	....	...	.	...
Manatee	......	....	...	....	100	100	100	100	100	100	100	100
Marion	80	100	80	100	100	100	100	100	100	100	110	120
Nassau	....	....	....	....	90	100	75	80	..	..	......	....
Orange	..	....	....	....	70	75	75	75	25	30	110	100
Osceola	..	..	...	...	100	100	100	100	90	90	125	130
Pasco	...	..	..	....	....	.	100	100	80	80	100	100
Polk	..	...	......	...	125	135	110	115	125	100	150	170
Putnam	....	....	70	70	100	100	90	90	...	....	90	90
St. Johns	....	....	.	......	80	85	80	80	...	.	....	......
Santa Rosa	90	90	...	...	100	100	90	90	65	65	100	100
Suwannee	..	....	60	60	80	80	90	90	100	100	75	75
Taylor	..	....	50	60	75	75	75	75	50	50	85	85
Volusia	..	...	.	....	90	90	......	....	....	....	100	120
Wakulla	55	60	60	55	100	100	50	60	100	100	100	100
Walton	80	85	....	....	95	100	85	80	80	85	85	90
Washington	95	90	..	...	90	100	85	75	100	105	100	150
General averages	73	73	72	71	94	98	91	89	92	93	103	114

Condition and Prospective Yield of Crops—Continued.

Counties	Sweet Potato's		Peanuts		Cassava		Hay		Bananas		Orange Trees	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	85	90	60	70	....	...	90	90	....	....	80	....
Baker	75	75	50	50	..	....	...	......	....	....	...	......
Bradford	100	75	100	100	...	...	110	140	....	....	110	....
Brevard	120	150	.	....	100	100	100	150	120	150	120	75
Calhoun	100	100	75	80	......	....	90	90	....	....	....	
Citrus	100	100	100	100	....	...	100	100	...	...	100	150
Clay	100	100	100	100	....	....	110	120	....	....	120	....
Columbia	95	85	100	100	100	100	105	95	......		125	....
Dade	100	100	....	....	...	...	....	. ..	100	100	105	105
DeSoto	100	110	90	80	95	90	110	120	100	110	100	110
Escambia	150	90	150	150	100	100	150	150	....	....	....	....
Franklin	95	100	90	95	...	..	....	..	....	....	...	....
Gadsden	110	125	110	125	...	...	100	100	....	....	....	....
Hernando	100	75	..	......	......	..	100	100	125	100	100	...
Hillsborough	100	100	....	...	....	..	...	....	....	....	110	80
Holmes	90	95	90	95	90	90	90	110	....	..	....	....
Jackson	70	70	80	80	...	...	120	120	...	....	...	....
Jefferson	75	65	.	..	...	....	100	100	....	....	...	....
Lafayette	80	75	90	90	...	...	100	100	.....	....	..	....
Lake	100	100	100	100	100	80	100	100	50	....	100	....
Lee	90	90	100	100	100	100	110	110	120	120	120	120
Leon	100	100	90	95	......	....	100	140		....	....	.....
Levy	75	75	100	100	100	100	100	105	...	...	....	....
Madison	80	80	100	100	......	....	100	200	...	..	...	....
Manatee	100	100	100	100	100	100	100	100	100	100	100	100
Marion	100	100	100	100	100	1100	100	95	..	....	110	120
Nassau	75	75	....	....	...	. .	50	50	....	....	100	....
Orange	80	75	.	....	100	100	100	110	...	....	100	100
Osceola	115	100	...	...	140	125	150	150	...	....	110	90
Pasco	100	100	70	70	90	90	100	100	..	..	100	100
Polk	115	110	100	110	125	125	150	180	125	125	160	145
Putnam	100	100	....	....	..	....	90	75	....	....	100	....
St. Johns	90	90	....	....	....	.....	90	90	...	....	50	....
Santa Rosa	95	95	75	75	100	100	100	100	....	....	..	....
Suwannee	100	100	100	100	100	100	100	100	...	...	....	...
Taylor	70	75	60	60	100	100	....	...	..	...	...	....
Volusia	100	100	...	..	100	130	90	75	....	....	100	125
Wakulla	100	100	50	50	75	75	50	50	....	...	....	....
Walton	100	100	95	95	......		75	80	....	....	....	....
Washington	85	75	100	100	99	200	110	250	....	...	...	....
General averages	95	93	91	91	101	155	101	112	105	115	105	109

Condition and Prospective Yield of Crops—Continued.

Counties	Lemon Trees		Lime Trees		Grape Fruit Trees	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua						
Baker						
Bradford						
Brevard					120	50
Calhoun						
Citrus						
Clay	100					
Columbia						
Dade	105	105	100	100	105	105
DeSoto	100	120	100	110	110	90
Escambia						
Franklin						
Gadsden						
Hernando					100	
Hillsborough	110					
Holmes						
Jackson						
Jefferson						
Lafayette						
Lake	100				100	
Lee	100	100	110	110	100	100
Leon						
Levy						
Madison						
Manatee	100	100	100	100	100	90
Marion	110	120	110	120	110	120
Nassau	100		100		100	
Orange					100	100
Osceola	125	75	100	100	130	70
Pasco	100	100	100	100	100	100
Polk	110	100	100	100	150	135
Putnam					100	
St. Johns						
Santa Rosa						
Suwannee						
Taylor						
Volusia					100	125
Wakulla						
Walton						
Washington						
General averages	105	103	102	105	108	99

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

VALUATIONS.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1900-1901.

Available Phosphoric Acid	4½ cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen)	15 cents a pound
Potash (as actual potash, K_2O.)	5 cents per pound

If caluclated by units—

Available Phosphoric Acid	90 cents per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.00 per unit

With a uniform allowance of $2.00 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of a fertilizer. To illustrate this take for example a fertilizer which analyzes as follows:

Available Phosphoric Acid,	6.39x.90	$ 5.75
Insoluble Phosphoric Acid,	1.15x.20	.23
Ammonia,	4.93x3.00	14.79
Potash,	7.11x1.00	7.11
Mixing and bagging		2.00
		$29.88

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

DEPARTMEMT OF AGRICULTURE, DIVISION OF CHEMISTRY.

R. E. ROSE, State Chemist. ANALYSIS OF FERTILIZERS. MARION G. DONK, Assistant Chemist.

NAME OF FERTILIZER.	Moisture.	Phos. Acid			Ammonia.	Potash (K_2O).	GUARANTEED ANALYSIS.						By Whom and Where Manufactured.
		Available.	Insoluble.	Amount.			Moisture.	Available. Phos. Acid	Insoluble. Phos. Acid	Total Phos. Acid.	Ammonia.	Potash (K_2O),	
Cotton Seed Meal	7.65				8 76						8 to 9		Harmon Oil Co., Harmony Grove, Ga.
Cotton Seed Meal	7.70			2.55	8.85	1.67	7.65			3.22	8.24	1.96	Jefferson Mfg. Co., Jefferson, Ga.
Cotton Seed Meal	7.62			2.80	8.61	1.27	7.65			3.22	8.24	1.96	Alabama Cotton Oil Co., Selma, Ala.
Cotton Seed Meal	7.54			3.07	8.15	1.69				2 to2½	7½to8½	1½ to 2	Alabama Cotton Oil Co., Mobile, Ala.
Cotton Seed Meal, Jersey brand	8.31			2.96	.67	1.67				2 to 3	8 to9½	1 to 2	Decatur Cotton Oil Co., Decatur, Ala.
High Grade Blood and Bone	6.4	3.62	7.51	11.13	10.29		5 to 7			12 to 15	9½to10		Cudahy Mfg. Co., S. Omaha, Neb.
High Grade Blood and Bone	6.09	3.61	5.13	8.74	10.30					8 to 10	10 to 12		Nelson Mason & Co., Chicago, Ill.
High Grade Blood and Bone	6.60	5.13	4.85	9.98	10.75		5 to 7			8 to 13	16 to 11		Wilson & Toomer Fert. Co., Jacksonville
Blood and Bone	6.99	4.07	14.48	18.55	5.87		5 to 7			15 to 20	6½ to 8		Cudahy Mfg. Co., S. Omaha, Neb.
Blood and Bone	6.50	3.58	7.51	11.09	10.24		5 to 8			11 to 12	9½to 10		Cudahy Mfg. Co., S. Omaha, Neb.
Blood and Bone	5.00	3.01	11,42	14.43	6.82		5 to 7			15 to 20	6½ to 8		Cudahy Mfg. Co., S. Omaha, Neb.
Dried Blood	10.33				16.43						16.00		Cudahy Mfg. Co., S. Omaha, Neb.
Muriate of Potash	3.06					50.72						48 to 52	Delaware River Chemical Works.
High Grade Sulphate of Potash	1.75					48.51						48 to 52	Tampa Fert. Co., importers, Tampa.
High Grade Sulphate of Potash	2.49					48.40						48 to 50	American Agricul. and Chem. Co., N. Y.
Nitrate of Soda	3.26				17.60							17 to 19	E. O. Painter Fert. Co. importers, Jackv'e
Acid Phosphate	13.88	14.99	3.19	18.18			12	13	2				Goulding Fertilizer Co., Pensacola.
Acid Phosphate	13.02	18.92	0.19	19.11			12	17½	1				Goulding Fertilizer Co., Pensacola.
Nitrate of Soda	0.76				18.50						19.00		Goulding Fertilizer Co., Pensacola.
Fruit and Vine Fertilizer	5.56	6.33	2.60	8.93	2.20	13.45	8 to 10	6 to 8	1 to 3		2 to 4	12 to 14	Tampa Fertilizer Co., Tampa.
Ideal Fruit and Vine Manure	8.88	6.88	0.41	7.29	2.96	10.36	8 to 10	6 to 8	1 to 3		3 to 4	10 to 12	Wilson & Toomer Fert. Co., Jacksonville
Ideal Fruit and Vine Manure	9.24	8.00	0.37	8.37	3.28	12.57	8 to 10	6 to 8	1 to 3		3 to 4	10 to 12	Wilson & Toomer Fert. Co., Jacksonville
Mapes' Fruit and Vine Manure	7.02	4.55	2.61	7.16	2.33	11 11	8 to 10	5 to 7	2 to 4		2 to 3	10 to 12	Mapes' Formula&Peru Guano Co., N. Y.
Americus Spl. Fruit&Vine Man.	12.02	6.68	1.30	7.98	3 89	9.85		5½to7½	3 to 4		4¼to5¼	10 to 12	Amer. Agricultural & Chem. Co., N. Y.
Bradley's Spl. Fruit&Vine Man	11 24	6.65	1.22	7.87	4.02	9.87		5½to7½	3 to 4	8½-11½	4¼to5¼	10 to 12	Amer. Agricultural & Chem. Co., N. Y.
Ideal Fruit and Vine Manure	10.94	7.37	1.09	8.46	4.31	8.58		6 to 8	1 to 2		4 to 5	8 to 10	Wilson & Toomer Fert. Co., Jacksonville
Americus Strawberry Fertilizer	10.34	7.03	1.68	8.71	3.25	6.04		6 to 8	1 to 2		3 to 4	6 to 8	Williams & Clark Fert Co., N. Y.
Pineapple Manure	7.00	7.52	2.56	10.08	5.36	9.52	8 to 10	4 to 5			5 to 6	7 to 8	Tampa Fertilizer Co., Tampa.
Special Strawberry Fertilizer	7.14	6.79	1.57	8.16	5.27	3.37	8 to 10	6 to 8			3½ to 5	3 to 5	Wilson & Toomer Fert. Co., Jacksonv'e.
Ideal Fertilizer	11.87	6.68	1.30	7.98	3.85	5.97		5 to 7			4½to5½	6 to 8	Wilson & Toomer Fert. Co., Jacksonv'e.
Simon Pure Fertilizer No. 1	8.80	6.20	1.25	7.45	4.42	11.71	5 to 8	7 to 8	1 to 2		4 to 4½	11 to 13	E. O. Painter Fert. Co., Jacksonville.
Bradley's Nursery Stock Fert	9.06	10.50	1.47	11.97	4.90	3.81		8 to 10	2 to 3	10 to 13	4½to5½	3 to 4	Amer. Agricultural & Chem. Co., N. Y.
Peruvian Vegetable Manure	10.90	7.89	2.34	10.23	4. 30	6.61	8 to 10	7 to 9	2 to 4		4½ to 6	8 to 10	Wilson & Toomer Fert. Co., Jacksonville.

BUREAU OF FERTILIZERS.

R. E. Rose, State Chemist. **Marion G. Donk**, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.

(Samples taken by purchaser.)

Name of Fertilizer	Moisture	Phosphoric Acid			Ammonia	Potash (K_2O)	Name of Sender
		Available	Insoluble	Total			
H. G. Blood and Bone.	7.15	.. ..	.....	10.23	9.66	.....	Wilson & Toomer, Fert. Co., Jacksonville.
H. G. Blood and Bone.	6.75	.....	....	14.7	10.20	.....	Wilson & Toomer, Fert. Co., Jacksonville.
H. G. Blood and Bone.	6.50	.....	.....	14.7	10.15	.....	Wilson & Toomer, Fert. Co., Jacksonville.
Blood and Bone..........	5.45	8.96	6.37	15.33	7.14	.....	Wilson & Toomer, Fert. Co., Jacksonville.
Dried Blood.............	12.87	.....	.....	0.75	17.0	. ...	E. O. Painter Fert. Co , Jacksonville, Fla.
Special Mixture........	.....	.....	.....	1.90	5.20	10.90	Wm. Y. Douglass, Dunedin, Fla
Bat Guano..............	.....	....	.....	6.52	10.81	1.95	E O. Painter Fert. Co., Jacksonville, Fla.
Acid Phosphate.......	1.88	13.14	6.74	19.88	.....	.....	E. O Painter Fert. Co., Jacksonville, Fla.
Ashes,..	.....	.....	.....	.....	.,...	4.06	W. H. Cox, Boyton, Fla.
Fertilizer..................	.....	....	.....	6.43	3.18	2.19	W. H. Cox, Boyton, Fla.
Castor Pumace.........	.....	.....	.....	2.06	7.82	4.67	E. O. Painter Fert. Co., Jacksonville, Fla.
Canada, H. W., Ashes.	.....	.....	.....	.....	.....	3.76	H. H. Harvey, Seffner, Fla.
Bat Manure or Guano.	.....	.....	.....	6.13	10.44	1.71	Lyle & Co., Bartow, Fla.
Can. H'd Wood Ashes.	.....	.....	.. ..	.....	.....	3.47	E. O. Painter Fert. Co., Jacksonville, Fla.
Tobacco Dust. ..	....	.....	.....	.....	1.29	4.38	E. O. Painter Fert. Co , Jacksonville, Fla.
Acid Phosphate	.....	12.56	3.51	16.07	.....	.....	Goulding Fertilizer Co., Pensacola, Fla.
Fertilizer.....	.....	0.40	0.84	1.24	3.81	21.95	Manatee Lemon Co., Palmetto, Fla.
Cotton Seed Meal	8.62	.....	.....	....	8.59	1.40	Wilson & Toomer Fert. Co., Jacksonville.
Cotton Seed Meal	6.99	.....	.....	.....	8.87	1.71	Wilson & Toomer Fert. Co., Jacksonville.
H. G. Blood and Bone.	7.37	4.50	6.13	10.63	10.32	.....	Ankeney Fruit Co., Ankona, Fla.
H. G. Blood and Bone.	6.34	1.73	2.85	4.58	9.41	.....	Ankeney Fruit Co., Ankona, Fla.
Cotton Seed Meal.....	10.54	3 21	... .	.....	8.36	1.56	Tallahassee Cotton Oil Co., Tallahassee.
H. G. Ground Tankage	....	5.08	4.64	9.72	10.48	. .	Chase & Co., Sanford, Fla.

For values see heading "Bureau of Fertilizers."

UNITED STATES DEPARTMENT OF AGRICULTURE.

Climate and Crop Service of the Weather Bureau—Florida Section.

A. J. MITCHELL, SECTION DIRECTOR, JACKSONVILLE, FLA.

Climatological Data for August, 1901.

Stations	Counties	Elevation, feet	Length of record years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days	
NORTHERN SECTION.																		
Archer	Alachua	92	17	80.0	—1.7	94	1	65	31	23	10.01	+2.84	1.98	20	9	22	0	sw
Bainbridge	Decatur, Ga	119	9	79.2	—2.0	92	10*	65	4	21	7 31	+1 20	1 70	16	...	...	...	...
Federal Point ¶	St. Jchns	10	5	80.0	—0 8	92	1*	68	31	23	9 62	+2 34	1 20	21	12	9	10	sw
Fernandina	Nassau	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort George†	Duval	...	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gainesville a	Alachua	175	15	80.0	—1.0	92	1*	66	4	21	9 54	+0 78	1 43	17	...	...	...	...
Huntington	Putnam	50	3	81.4	—0.1	95	1*	67	4	25	10 75	+2 28	1 77	18	7	20	4	se
Jacksonville	Duval	43	29	80.5	—2.0	93	8	68	31	21	6 12	—0 07	2 32	21	7	14	10	se
Jasper	Hamilton	165	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lake Butler b	Bradford	...	4	80.2	—1.5	95	1*	65	31	26	9 57	—0 38	2 86	15	...	...	...	...
Lake City	Columbia	201	13	80.7	—0 7	95	9	67	3*	25	8 72	+2 47	2 66	17	1	21	9	se
Macclenny	Baker	140	4	81.2	—1.5	97	9*	66	2*	30	10 96	+3 45	2 67	22	12	19	0	se
McAlpin	Suwannee	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Micanopy a	Alachua	...	7	80 2	...	93	2*	64	29	26	13 74	+4 23	2 30	11	...	...	...	...
Middleburg	Clay	...	1	80.0	...	99	1	64	31	30	10 18	...	2 52	18	2	16	13	e

Climatological Data for August—(Continued.)

Stations	Counties	Elevation, feet	Length of record, years	Temperature, in degrees Fahrenheit: Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Sky: Number clear days	Number partly cloudy days	Number cloudy days.	Prevailing direction of wind
Savannah, Ga.......	Chatham, Ga..	36	30	79.8	—1.0	89	10	66	25	20	6.44	—1.51	1.56	15	6	20	5	s
St. Augustine......	St. Johns........	10	52	82 2	. . .	91	22	72	10	17	4 01	—0 35	1 29	9	....	......	..	......
Sumner............	Levy............	......	10	79 6	—0 5	94	10	66	31	25	15 97	+7 39	5 40	18	2	23	6	sw
Switzerland	St. Johns........	.	15	80 1	+0 3	95	1	66	4	24	6 57	+0 47	2 16	17	...	....	..	......
Thomasville, Ga....	Thomas, Ga....	330	23	79 2	—1 3	93	26	66	4	24	11 59	+5 55	3 16	17	..	..	......	......
Waycross, Ga......	Ware, Ga......	131	19	79 6	—1 7	92	10	67	4*	22	8 18	+1 78	1 63	20	.	..	...	......
	Means	....	....	80 5	—1 0	...	...	..	...	...	9 68	+2 10	....	17	6	19	6	se
CENTRAL SECTION.																		
Bartow............	Polk....	...	5	80 8	—0 8	91	7	71	19	18	12 39	+4 65	2 12	19	6	23	2	sw
Brooksville.........	Hernando......	328	7	....	.....	.	..	..	...	...	......	....	....	..	..	....	.. .	......
Clermont	Lake............	..	7	81 4	—1 3	95	29*	68	29*	27	7 78	—0 34	2 25	15	15	14	2	sw
DeLand...	Volusia	..	1	80 4	....	95	8	68	27	23	......	......	....	....	...	......	....	......
Earnestville........	Pasco..........	193	5	81 4	—1 3	95	7*	68	4	22	19 75	+8 16	2 15	25	1	18	12	se
Eustis..............	Lake............	180	9	82 0	—0 2	98	8	69	31	26	13 00	+5 98	2 20	23	6	18	7	se
Ft. Meade...	Polk...........	125	16	80 8	—0 3	97	7*	67	19	28	19 60	+11 41	3 86	27	4	23	4	e
Fort Pierce.........	Brevard.... ..	....	..	79 6	—3 0	90	1*	68	15*	20	9 43	+2 38	2 75	18	7	9	15	se
Inverness...........	Citrus...........	......	1	79 9	—1 4	94	9	68	3*	22	14 32	+5 75	2 10	26	...	....	....	se
Kissimmee..........	Osceola	65	8	80 8	—1 8	95	31	68	2*	25	9 91	+1 25	1 35	19	....	....	....	......
Merritt's Island	Brevard.......	20	18	80 8	—0 8	90	1*	72	18*	15	4 71	—0 74	0 90	9	19	8	4	se
New Smyrna..d.....	Volusia..........	20	14	79 1	—0 6	93	5	66	3	22	6 35	+0 21	1 00	12	..	....	.	......
Ocala	Marion	150	11	81 0	+0 1	96	23	66	4*	28	13 46	+5 54	4 38	22	1	18	12	e
Orange City.......	Volusia........	50	9	80 9	—1 1	95	8	68	19*	25	12 87	+5 71	3 78	21	3	18	10	se
Orlando...........	Orange........	98	8	80 5	—1 3	92	8	70	19*	19	13 18	+5 67	3 24	24	10	17	4	e

Plant City	Hillsborough	121	7	81 0	—0.8	96	7	67	3*	25	12.05	+2 78	2.95	26	1	28	2	s
Rockwell. c	Marion	....	1	81 6	.....	97	11	68	28	26	13 40	....	6 10	9	....	....	....	.....
Sebastian	Brevard	36	3	79 8	—1 5	90	5	71	15*	15	5 22	+1 46	1 01	11	....	....	....	.....
Tampa	Hillsborough	20	11	80 4	0 0	92	9	70	18	20	8 03	—0 72	2 37	20	0	20	11	ne
Tarpon Springs g	Hillsborough	20	16	80 9	—0 3	93	9*	68	24*	25	¶8 85	......	2 07	¶14	....	......	....	......
Titusville ¶	Brevard	....	......	79 5	—0 5	92	1	68	2*	22	6 30	+2 82	1 82	12	....	...	....	se
	Means	...	...	80 6	—0 9	...	...	..	...	...	11 21	+3 65	...	18	6	18	7	se
SOUTHERN SECTION.																		
Flamingo	Monroe	....	....	81 9	....	96	8	70	19	19	12 65	....	2 00	10	16	0	15	se
Havana	Cuba	57	10	81 0	—1 0	92	17	69	30	18	6 63	+0 61	1 97	13	6	15	10	e
Hypoluxo	Dade	...	4	81 2	—0 2	93	20	70	10*	19	10 07	+5 01	1 40	21	....	....	...	......
Jupiter	Dade	28	13	80 0	—1 0	90	31	69	17	19	12 13	+6 57	1 77	21	7	18	6	se
Key West	Monroe	22	30	81 2	—3 0	88	8	69	11	19	5 75	+1 02	2 15	19	10	15	6	se
Manatee	Manatee	16	18	80 7	—0 5	94	24	68	19*	22	12 91	+3 55	3 88	21	10	17	4	se
Marco	Lee	.....	....	82 9	....	98	24*	68	17	23	9 34	....	3 10	21	6	18	7	se
Miami	Dade	....	...	81 2	—1 6	90	1*	70	3*	18	10 85	+3 13	1 80	9	8	18	5	e
Myers	Lee	....	15	79 0	—2 3	90	24	70	2*	18	12 41	+4 29	1 48	16	10	12	9	s
Nassau	N. P. Bahamas	....	......	82 8	....	90	5*	74	17	14	5 01	....	1 74	23	......	....	....	......
Nocatee	DeSoto	....	1	81 2	...	96	8	69	17*	24	12 53	....	3 00	22	9	0	22	......
San Juan	Puerto Rico	82	......	......	.....	...	...	..	...	..	....	....	.....	....	...	...	....	......
	Means	...	...	81 0	—1 4	...	...	..	..	....	10 96	+3 93	......	18	10	12	9	se
WESTERN SECTION.																		
Carrabelle	Franklin	12	4	79 5	—2 2	90	10	69	4*	16	8 49	—1 33	2 35	8	....	....	...	w
Daphne. e	Baldwin, Ala	......	...	80 2	—1 1	98	3	65	28*	24	16 75	+7 44	12 00	7	......	....	....	sw
DeFuniak Springs	Walton	193	3	79 0	—1 4	96	11	64	4*	28	13 22	+0 96	5 00	18	1	27	3	......
Marianna	Jackson	....	1	78 8	.....	90	2	64	4	20	8 43	......	1 70	17	13	9	9	s
Mobile	Mobile, Ala	35	30	80 4	0 0	96	2	69	29	23	9 77	+2 52	5 44	15	11	10	10	sw
Montgomery	Montgom'y, Ala	219	28	79 9	—2 0	93	9	66	29	24	6 91	+2 64	2 01	8	10	13	8	se
Monticello	Jefferson	....	....	......	....	...	...	..	..	......	......	......	....	....	...	....	....	......

Climatological Data for August, 1901—Continued.

Stations	Counties	Elevation, feet	Length of record, years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days	
Newton....	Dale, Ala....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Pensacola....	Escambia....	56	21	81 0	0 0	93	3	69	28	18	6.53	—1.82	2.36	16	7	15	9	ne
Quincy....	Gadsden....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
St. Andrews Bay....	Washington....	....	3	80 1	—1 4	96	11	65	30	26	8 75	....	1 75	18	17	13	1	sw
Stephensville†....	Taylor....	....	2	77 9	—2 8	96	9	70	1*	....	12 64	+1 76	5 00	14	0	24	7	sw
Tallahassee....	Leon....	193	15	78 5	—1 1	89	2*	67	4	20	13 40	+5 96	2 45	20	13	14	4	s
Wausau....	Washington....	250	3	79 8	—1 1	96	10*	65	3*	25	10 10	+0 39	2 63	20	6	20	5	....
Wewahitchka....	Calhoun....	....	....	79 4	....	94	1*	65	30	27	9 72	....	2 10	21	4	7	20	s
	Means....	....	....	79 3	—1 4	....	....	....	....	....	10 14	+0 99	....	17	8	16	7	s
JULY, 1901.	State Means	....	....	80 4	—1 0	....	....	....	....	....	10 58	+3 09	....	18	7	17	7	se
San Juan....	....	....	....	80 0	—1 0	89	25	70	6	15	10 96	+5 00	4 04	22	5	13	13	e

†Thermometers are not self-registering and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily.

*More than one day. ‡Weather Bureau.

¶Not used in obtaining means.

All records, except stations outside of the State, are used in determining State or district means, but State and district departures are determined by comparison of current data of only such stations as have normals.

a, b, c, etc., following name of station, indicate number of days missing from report.

Salient Climatic Features.

ATMOSPHERIC PRESSURE.

The mean pressure for the month was 30.00 inches, which is below normal. The highest observed pressure was 30.12 inches, at Jacksonville on the 24th; the lowest 29.75 inches, at Pensacola on the 16th; monthly range for the State was 0.37 inch.

TEMPERATURE.

(Degrees Fahrenheit.)

The monthly mean temperature for the State was 80.4 degrees, 1.0 degree below normal. By sections, the means were: Northern, 80.5 degrees; Central, 80.6 degrees; Sothern, 81.0 degrees; Western, 79.3 degrees. The highest monthly mean temperature was 82.9 degrees, at Marco; the lowest monthly mean temperature was 77.9 degrees, at Stephensville. The highest temperature during the month was 99 degrees, at Middleburg on the 1st; the lowest temperature during the month was 64 degrees, at DeFuniak Springs and Marianna on the 4th, Micanopy on the 29th and Middleburg on the 31st; absolute range for the State was 35 degrees.

PRECIPITATION.

(Inches and hundredths.)

The average precipitation for the State during the month was 10.58 inches, which is 3.09 above the normal amount. By sections, the averages were: Northern, 9.68 inches; Central, 11.21 inches; Southern, 10.96 inches; Western, 10.14 inches. The greatest monthly amount was 19.75 inches, at Earnestville; the least was 4.01 inches at St. Augustine. The greatest amount for any twenty-four hours was 6.10 inches, at Rockwell on the 16th.

WIND AND WEATHER.

The prevailing winds during the month were from the southeast. By sections, there were: Northern, 6 clear days; 19 partly cloudy; 6 cloudy. Central, 6 clear; 18 partly cloudy; 7 cloudy. Southern, 10 clear; 12 partly cloudy; 9 cloudy. Western, 7 clear; 17 partly cloudy; 7 cloudy.

Rainy days:Northern section, 17; Central, 18; Southern, 18; Western, 17.

WEATHER FOR AUGUST.

Precipitation was greatest in Polk and Pasco counties, the monthly totals exceeding nineteen inches. The least amounts were reported from St. Johns and Brevard counties. The monthly average rainfall was 10.58 inches, about three inches above the normal; the mean temperature was 80.4 degrees, which was 1 degree below the normal for ten years.

PRESSURE AND WIND TABLE

Stations	Atmospheric Pressure					Wind Velocity, in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville	30.02	30.12	24	29.92	1	5,293	36	sw	16	96	71	84
Jupiter.	29.99	30.08	17	29.90	26	6.234	33	se	10	95	71	84
Key West	29.99	30.06	8	29.87	27	5,351	36	sw	11	100	62	76
Pensacola	*29.98	30.10	25	29.75	16	7,143	70	sw	15	98	66	80
Tampa	29.99	30.09	8	29.87	11	3.837	32	s	5	98	64	84

*8 a. m. readings only.

COMPARATIVE TEMPERATURE AND RAINFALL DATA FOR AUGUST, DURING THE PAST TEN YEARS.

Year.	Mean Temperature.	Average Rainfall. Inches and hundredths.
1892	80.9	7.84
1893	81.5	6.68
1894	81.0	7.33
1895	81.3	6.20
1896	82.0	5.81
1897	81.6	6.68
1898	80.8	12.96
1899	82.2	6.62
1900	82.4	4.20
1901	80.4	10.58

The normal temperature for August is 81.4 degrees; normal rainfall is 7.49 inches.

AUGUST STORMS.

No severe local storms occurred during the month, but the uniformly quiet conditions were broken on the 15th and 16th by a tropical disturbance which approached the west coast of Florida and Alabama on the above dates. This disturbance slowly moved westward over South Florida on the 11th,, progressing west northwest, reaching the Alabama and Louisiana coast on the 16th. Very high winds—hurricane velocities—prevailed, Pensacola reporting 70 miles and Mobile 60 miles per hour. Much damage resulted to cotton and corn from high winds and heavy rains. Minima pressures in inches were: Pensacola 29.75 and Mobile 29.32.

Personal Experience With White Fly.

Last winter, as is well known, California sent one of her experts to Florida to show us how to ararnge our tents and fumigate the white fly-infested trees in the grove known as the Bank of Kinwood grove. Professor Woodworth was assisted by Prof. Gossard, of Lake City. Only one row of trees, with a few scattered trees, were fumigated. I think nearly every egg was destroyed, and some trees partially defoliated, but as soon as the fly was on the wing, on the adjoining trees (limbs touching), they could soon spread to the trees again that had been treated. While these experiments perhaps were effective, it was considered too expensive by a great many who witnessed the operation. The trees cannot be treated with success while wet with dew; therefore they must be fumigated in the day time. If the weather is cloudy, there is very little danger of burning the tree, but if the sun is shining I believe it is necessary to have colored tents.

We had between seventy and eighty acres of young trees that were covered, more or less, with the white fly; these trees were from four to ten feet high, and some few large seedlings. After gaining all the information we could, we decided to spray with the rosin compound. This we did, very thoroughly, once in the middle of December and once in the middle of January, with a result that this spring we failed to find a single fly, except a few (five or six), on a large tree standing beside the fence dividing our grove from a badly infested grove belonging to a neighbor. We were so well pleased that we shall continue to use the rosin compound on any part of our grove that shows signs of fly, and we think there is no better time than after the fruit has been picked, in December and January. It will do no good to spray the outside of the tree, as in treating the rust mite, but you must get under the tree and fairly deluge the foliage on both sides. If this can be done and twenty-four hours intervene without showers, the eggs and larvae will be found dead. I think one need not fear the white fly any more than the red scale.

Some are willing to sit down and allow the fungus to eat up the white fly, but I don't think it pays to do so. We have one grove of 640 trees and sixty small buds; this grove has been covered with white fly in the grove for at least four or five years; there has been more or less fungus in the growth for four years. The crop two years ago was about 600 boxes; last year it was 2,000 boxes; this year it will be over 5,000 boxes. Each crop has been covered with sooty mold, and last spring it looked as if the fungus had about cleaned up the fly, so that the fruit wood was clean, and we got this fine bloom and crop of fruit, but early in August we began to see the sooty mold forming on the fruit, and upon examination we found plenty of the fly on the wing. There were also fungus.

In order to save us quite an expense this winter in cleaning the fruit, we decided to spray with the rosin compound. This we did the first week in September, with the result that fully nine-tenths of the fruit will be smooth and clean of smut. This sooty mold retards the growth of the fruit and its ripening. We expect to thoroughly spray these trees twice this winter, and while we cannot hope for the success we had with the small trees, we do believe that we can keep the fly in check, so that it will not be necessary to spray or wash the fruit, and we shall expect a fairly good crop the coming season. But had we not sprayed the trees in September, and should not spray again this winter, I don't believe we would secure 200 boxes the coming season of 1902-3.

From our own experience, we would advise every man to purchase the best spraying outfit he can buy, and do thorough work, and he will secure a crop of fruit each year. One-half the trouble is in not having power enough in the pump, so that the force of the spray will turn the foliage in every direction. If our State would legislate as the State of California does, each man would be compelled to rid his grove of all injurious pests. As it is now, one man breeds enough insects (and little fruit) for his neighbors to fight the entire year. I believe the up-to-date South Florida orange grower will never lose a crop of fruit from the white fly, for he will use good judgment and spray his grove intelligently.—F. D. Waite, Manager Manatee Lemon Company, Palmetto, in *Times-Union and Citizen.*

Celery Growing in Florida.

Celery growing in Florida, though in its infancy, is attracting much attention, both in Forida and Northern States. Not many years ago it was thought impossible to grow celery in the South. This was, and is still doubtless true of Southern States, too cold to grow it in the winter months. Florida, however, is an ideal land for all such crops in winter. Celery grows with us, under proper condition of soil and culture, as readily as cabbage. Its growth and success as a money-making crop is already beyond the experimental stage in South and Middle Florida. There is but little doubt it can be grown equally well in most of the Northern counties. My own experience and observation, however, is confined to South Florida—extending from DeLand to Tampa. My home and farm is at Lakeland, Polk county, where I and others have raised celery for the past three years. However, Mr. Neyland and others of Tampa have grown celery for a much longer period. Mr. Neyland had in about twelve acres three years ago. He shipped by the car-load, and realized $1,500 per acre net that season. Since his great success that year many sections of South and Middle Florida have fallen into line, and much success, both in growing and selling, is reported from the Manatee section, Gainesville, Lakeland and other points.

I do not presume in this article to cover the entire field of celery culture in Florida. Six articles the length of this would be required to do that. A mere outline, therefore, is attempted, and this mainly taken up with the changes necessary to be observed in the method practiced by growers of celery North and those who grow the crop in Florida.

In the first place, we grow celery in the winter. The difference, therefore, in starting a seed bed is most marked. We usually commence seed beds in August. This is a most trying month in Florida, continual rains, with very hot sun, being the order, and seed can neither germinate nor grow without protection, both from rain and sun. It is absolutely necessary, therefore, to have a frame work over beds for sash or awning to rest upon. The sash, etc., must be so constructed as to be readily taken off and put on. The cloth for awning or sashes should be light in weight and color. This will make it unnecessary to remove them until after the seeds are up. Heavy or dark cloth obstructs the light and hinders germination. Beds should be slightly elevated and six to eight feet wide, with walks or alleys between them. Three sowings may be made. The first the last week in August or first week in September; three weeks later another sowing and in October the last and the largest sowing. The first and second sowings need not be very large, but shoud be pricked out for reset. The October sowing need not be protected, and if properly thinned will make good plants without resetting.

LAND FOR CELERY.

The best lands with us for celery growing are the timbered muck lands. These are always full of moisture, vegetable decomposed matter and humus, making an ideal condition for plant foliage development. This natural condition of soil, when supplemented by proper chemicals, gives a showy, highly flavored and tender plant.

These lands must be properly drained, cleared and prepared. It may be found necessary to ditch deeply in order to remove trees, stumps, etc., in clearing. In such a state ditches must be refilled with soil, gates put in or some other system of irrigation put in. It is utterly impossible to grow good celery in Florida without good water supply. Rains with us in the winter are like angels' visits, very rare, indeed. As a general rule, your water level should be within eighteen inches of the surface. With this idea in mind no great mistake need be made. If your plat is so situated that you can hold the water level at eighteen to twenty inches, you are all right for moisture; if not, you had better put in an irrigating plant. The best condition, however, is a system of drainage and subirrigation in one. This is called Cole's system of subirrigation, and is quite costly and not much practiced on that acocunt.

These muck lands must always be cropped by some grass feeder, such as field corn, Irish potatoes, pumpkins, etc., before celery is attempted. Cow-peas are great soil correctors and soil builders, but are thought to be great propagators also of insects and fungus which attack the young plant and sometimes work great disaster in the seed beds. This, however, has not yet been fully proved, but I think there is suffiient ground for the idea to make us cautious in the use of the pea.

Propagation of the soil is much the same as practiced north, only we do not use much stable manure, but use instead chemical mixtures of ammonia, potash and phosphoric acid. The proportion of the individual ingredients are governed by soil conditions, but it is always presumed that celery requires much more ammonia than is found available in any soil, so we give a larger proportion of ammonia for this crop than for any other.

NOTES.

Plants are set on raised beds four feet wide, double drills, eight to ten inches apart in each bed.

Blanching is done altogether by boards. Ten-inch boards, sixteen feet long, are usually used, setting them on the outside of the double drills, making one set of boards do for two drills.

Shipping is usually done in barrels, eight or ten dozen in a barrrel. Usually they go through straight, but April shipments sometimes heat.

With us the self-blanching dwarf varieties are used, the dwarf golden self-blanching being preferred. Henderson's white plume does fairly well, but is not so sure a header.

The general presumption is that Florida celery is inferior in flavor, aroma and crispness. I do not believe that this is proven by the facts. Of course, in the present stage of experimentation, much of the stock shipped is inferior. Much of the celery grown in the State is grown by persons having little practical knowledge of celery growing, and so their products are not first-class. But old growers and especially those experienced in the requirement of the plant in Florida grow an article that cannot be excelled. A trite old saw comes in here: "The proof of the pudding is in the chewing of the bag." Our celery is good enough to sometimes command two dollars per dozen, and a crop that nets a man $1,500 per acre can't be very bad either in looks or quality.

THINGS NECESSARY TO SUCCESS.

A man must know how to grow celery. A greenhorn won't do anything but spend his money in trying to grow celery in Florida.

Get the right kind of soil, do everything in the way of preparation just right and don't be afraid of your work or your money.

Raise your own plants and have good strong ones. Never set a weak plant.

Plant Dwarf Golden self-blanching from a good seedsman.

Blanch with boards.

Keep a close watch on a successful grower in Florida and imitate him until you know how better than he does.—L. D. Jackson, in the *National Rural.*

Nitrogen, Phosphoric Acid and Potash.

The proper proportion of these three fertilizing ingredients in any soil assures good crops, says Prof. James S. Doty, in *Massachusetts Plowman.* Nature does not always place them in the right places for all plants, but occasionally we find some nook where the fertilizing ingredients are properly distributed. Some plants need more of potash than others, and again others need and demand an excess of nitrogen. It has taken years to analyze the plants so that we can tell about the needs of each class, and it will be many more years before their needs will be so popularly known that every cultivator of the soil will mix his fertilizing ingredients just right for the various economic plants. In a general way, however, the needs of the plants can be understood so that one can intelligently apply our scientific knowledge about potash, phosphoric acid and nitrogen.

Potash forms the starchy part of the plants, and contributes toward the growth of the woody part of the stems and fleshy portions of the fruit. Plants that have woody stems and plenty of starch either in the fruit or leaves require plenty of potash in the soil for them to do their best. Those that are naturally deficient in these particulars get along without so much potash. There is no other substance that can quite take the place of potash for performing these functions.

Phosphoric acid enters less into the vital constituents of the plants than either of the other ingredients. It might be said to supply the salts and minerals to the plants—the iron to the system. It is tonic in its action, and when applied it stimulates plants to quicker maturity. It does this as most good tonics do to the human system, by helping the plants to assimilate the food proper. Phosphoric acid applied to the soil enables the plants to take up plant food that might otherwise remain unassimilable for considerable time.

Nitrogen has been said to form the prime constituent of all plant growth, and without it nothing could grow. It gives color to the foliage, vitality to the stalk and stem, and food to the whole plant. It enters actively into the very life of all plants, and very few fail to respond to its quickening and beneficent action. It is the nitrogen in the barnyard manure that makes the plants respond so quickly to it. It is found in the air, soil and decaying plants. It is best applied to the soil in the shape of green manure, such as clover, cow peas or beans, but it can be added to it in an artificial way by applying nitrate of soda and suplhate of ammonia.

MANURING SOILS NATURALLY RICH.

It may seem absurd to talk of manuring soils naturally rich, yet the evidence of our official statistics tends to prove these naturally rich soils have a very low productive power. The low average yields per acre of wheat and corn on our rich prairie soils is often quoted as a kind of natural reproach. There seems to be no doubt of the fact that these soils are rich; there is certainly no denying that they give a very low acre yield.

Low acre yields on rich soils is practically invariably due to inequalities in the supply of fertilizers or manures. A soil rich in organic matter is likely to be rich in fertilizer nitrogen, but may be relatively deficient in fertilizer potash and phosphoric acid. In a natural state the potash and phosphates have been used over and over again in making crops of grasses, more or less of which belong to the legume family. Thus, there has been a constant increase in the supply of fertilizer nitrogen, but no corresponding increase in the supply of potash and phosphate. The result is that the soil becomes charged with vegetable matter moderately rich in nitrogen, but low in mineral fertilizers.

Under these conditions, fair crops of stalks of straw may result, but the grain will be low in quantity. Potash and phosphate are the determining fertilizer ingredients in producing the seeds of plants; if theres is present in the soil relatively more available nitrogen than available potash and phosphate to properly accompany same, the yield of grain (seed) is controlled by the deficient mineral fertilizer. The strength of the chain is the strength of its weakest link. Even the yield of straw and stalks cannot go beyond a certain limit with a deficient supply of potash and phosphate, though the nitrogen be abundant.

Though such soils are called rich, they are chiefly rich as regards nitrogen only, and too much nitrogen is only a trifle less harmful than too little, especially in grain farming. These rich soils will amply repay manuring with mineral fertilizers. They do not require heavy manuring, or fertilizing rather, as do the more exhausted soils of the Atlantic coast line, but the small quantity needed is just as important as the larger applications found necessary in the east. One hundred pounds of acid phospate and 50 pounds of potash per acre will make a great showing, though doubtless twice as much would still show a handsome margin of profit.

Any kind of chemical fertilizer supplying potash and phosphoric acid may be used. Finely ground bone meal is very useful as a source of supply of the latter, while muriate of potash would be cheaper per actual pound of potash than kainit, on account of the high freight rate. The combination would show up well.—S. Cox, in Exchange.

Vol. 12. No. 73.

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FLORIDA

(Department of Agriculture.)

..Monthly Bulletin..

MARCH, 1902.

B. E. McLIN, Commissioner of Agriculture,
TALLAHASSEE, FLA.

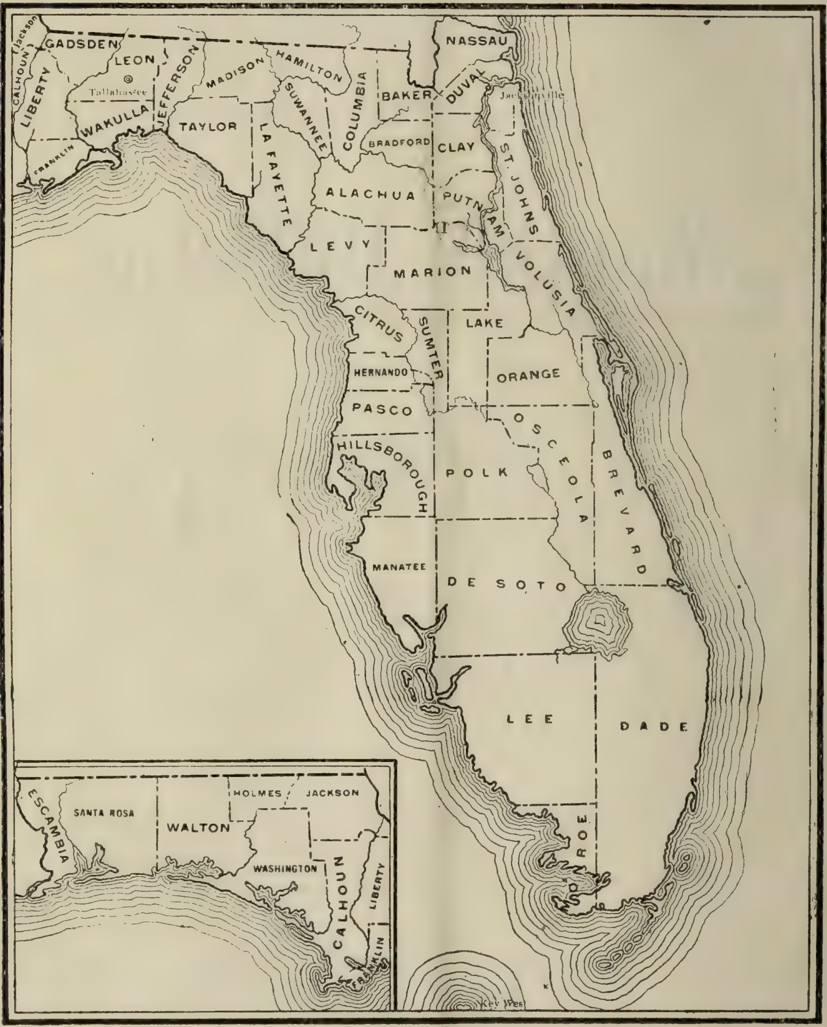
Part I. Crops.
Part II. Fertilizers.
Part III. Weather Report.
Part IV. Miscellaneous.

These Bulletins are furnished free to those requesting them . . .

TALLAHASSEEAN BOOK AND JOB OFFICE, TALLAHASSEE, FLA.

County Map of the State of Florida.

(For the Bulletin.)



Notice.

With this issue of the Monthly Bulletin its publication is resumed.

To our corps of correspondents we tender greetings, and trust that we will continue to have their support and assistance in the work of making the Bulletin the truthful exponent of agricultural conditions as they exist throughout the periods of growth and maturity of the many and various crops. It is the aim and desire of the Department to make the Bulletin serve the interests of the people, and to do that effectually it must have the assistance of friends from all sections of the State; with such help success and satisfaction is assured. The Bulletin will contain numerous articles on subjects of great and growing interest to the agriculturists and fruit growers of the State, and hopes by its efforts to add a good share to the increasing prosperity and happiness of the people of Florida.

Note.—We suggest that all persons receiving copies of the Bulletin keep them on file for future reference.

DEPARTMENT OF AGRICULTURE.

Hon. B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

Alachua County—The late cold and wet spring has retarded planting of field crops, which are from two to three weeks behind the usual time. There will be a considerable increase in a number of crops this year. The acreage nor condition of vegetables is not quite up to the usual owing to unfavorable weather so often during winter and spring.

Brevard County—Our orange growers particularly feel encouraged; good prices have been obtained and there is a heavy bloom on trees. Potatoes are a bad stand, though an increased acreage was planted, the crop will not be up to the average. Most of the field crops we grow are very good, and fruit trees all doing well.

Calhoun County—The spring is so late and so much wet, that crops are worse behind than for many years. There will be full, and in some instances increased, acreage planted in the usual filed crops; vegetable crops all late; fruit trees doing well.

Citrus County—Most of the crops are doing well, though it has been too cool for several of them, keeping them back, and causing them to grow slow. There is an increased acreage in several crops. The falling off in sugar cane is caused by the seed getting frost-bitten last fall before it was cut. Fruit trees doing well.

Clay County—We have had plenty of rain, and good spring weather all through March. The acreage in field crops is about the same as last year, except in one instance there is a considerable increase. Fruit trees are doing well.

Columbia County—The preparations for planting crops are much more thorough than usual and there is a noticeable increase in the acreage being planted to a number of field crops; planting is quite late on account of unfavorable spring weather. Fruit promises to be good; everything blooming profusely, and trees seem to be more healthy.

Dade County—We have had a fine growing spring, and the vegetable crops have done well, and brought satisfactory prices, which continue; crops all look well. Fruit trees are doing unusually well, and prospects are fine for a fine yield next fall.

DESOTO COUNTY—Weather conditions are rather too cool, but the ground generally is in fairly good working order; there is considerable increase in several field crops, also in the vegetable crops; conditions are fairly good, considering the unfavorable weather. Fruit and fruit trees are looking well; fine crops are apparently assured.

ESCAMBIA COUNTY—The Spring weather has been so cold and there is so much rain, that there has been very little planting so far; the acreage will be increased in all field crops; vegetables are doing well considering the unfavorable weather. It is too early to make estimate on fruit crop, but the trees are looking well.

FRANKLIN COUNTY—The Spring has continued so backward that planting is slow; the heavy rains have also been a drawback; garden truck is doing fairly well.

GADSDEN COUNTY—Planting is very backward on account of the wet cold weather; recently it has been so wet that little or no planting or other field work could be done. There will be a considerable increase in acreage of a majority of the crops.

HERNANDO COUNTY—There is a very general increase in the acreage of crops this year, and in several instances the increase is very large; crops are in very good condition, and truck is doing well. Orange trees are coming out finely and looking well; other fruit trees also doing well.

HILLSBOROUGH COUNTY—Planting is backward, and few of the field crops are finished planting. Vegetable crops are increased in acreage and turning out well. Fruit trees doing well and a fine prospect for heavy crops of fruit.

HOLMES COUNTY—This is the latest, also the wettest, spring on record, and has delayed planting very much; all crops will be largely increased in acreage this year. Garden crops are doing well and so are fruit trees.

JACKSON COUNTY—The rains during March have been the heaviest that we have had in this section since 1882, and has caused the farmers to get badly behind with all farming operations; acreage of field crops will be largely increased in nearly all instances.

JEFFERSON COUNTY—Farmers are away behind in all farm operations, owing to the cold and wet spring. Planting is just getting under good headway. There will be an increase in acreage of some of the principal field crops.

LAFAYETTE COUNTY—The lateness of spring and the cold, excessive rains have made farm work later this year than usual. There will be an increase in one or two crops; others will be about same as last year.

LAKE COUNTY—Crops are doing well, the area planted is about the same as last year. There is a considerable increase in acreage in vegetable products for market, and so far prices have averaged satisfactory.

Lee County—We have had fine seasons for fruits, vines and vegetables; citrus fruit trees in extra fine condition, also corn, sugar cane and many other crops; we have had plenty of rain and but very little frost in this county; all is prosperity; as much as one thousand dollars net from an acre of vegetables is often reported. All crops are growing their best.

Leon County—Planting is very much behind in this county, owing to late, cold spring. The acreage planted to field crops will be mostly increased; planting is just getting under good headway, and with favorable weather will progress rapidly. Vegetable crops are on the average doing well, though in some localities they were much injured by heavy rain.

Levy County—The weather has generally been very unfavorable for all crops; too wet for vegetables; frost killed a large per cent. of the cucumber crop on the 18th of March. There will be in most cases quite an increase in the acreage of field crops.

Madison County—The acreage of crops will be about same as last year; the spring has been so backward, and cold, that farmers are very much behind in planting. Vegetable crops are in fairly good condition, but backward owing to cool weather.

Manatee County—There is an increase in the acreage of nearly all crops; vegetable crops have done well, and on the average have brought fair prices. Fruit trees are doing well.

Marion County—It has been a little cold for growing crops at times, but as a whole we have had a splendid season up to the present time; a number of the crops will be increased in acreage over last year, while none are likely to fall below it; field and vegetable crops are in general good condition, and vegetables have been selling at fair prices; fruit trees are doing very well, growing rapidly.

Nassau County—We have had plenty of rain and crops are doing well, looking extra well; fruit also promises well. The acreage of crops will average about the same as last year; vegetable crops also about the same.

Osceola County—Acreage of crops are about the same as last year, except in one or two cases, such as cassava and velvet beans, which are very largely increased; there is also considerable increase in some vegetable crops; these crops have averaged well, and generally brought satisfactory prices. Fruit trees are growing finely and the prospect good.

Polk County—The increase in acreage of crops this year is greater on the whole than for many years; condition of field crops is good; the vegetable crops have done well and are bringing in satisfactory returns. Fruit trees are growing splendidly, and will have good crops. Everything seems prosperous.

St. John's County—Truck is very backward in consequence of cold spring; the acreage planted to crops of various kinds is about as usual, though an increase in some instances is to be seen. Peach, pear and plum crops give promise of a full yield.

Santa Rosa County—The crops were very late in being planted this year on account of the cold and wet spring. The acreage will be about as last year.

Sumter County—With a few exceptions the acreage to field crops is about the same as last year; in both oats and sugar cane there is a lack of seed, much cane being killed by frost before cutting. Vegetable crops have done very well, and fruit also looking fine. Peaches in heavy bloom.

Suwannee County—In some sections of the county there will be an increased acreage in some of the crops, but on the average, the acreage will be about as last year. Conditions are becoming more favorable; fruit trees are in good condition, prospect good for full crops.

Taylor County—The spring has been so backward that little planting has been done; it has been too cold and too wet. The acreage will be about as last year.

Wakulla County—The cold and backward spring has prevented farmers from planting as early as usual; the acreage in crops generallly will be about the same as last year.

Walton County—Farmers are very backward in planting on account of rain and cold weather; acreage of sugar cane will be short from the fact that a good many people lost their seed cane by freeze. In most cases the acreage will be about same as last year. Fruit crop promises good.

Washington County—All farming operations are very much behind, on account of late spring and unusually heavy rains. There will be quite an increase in acreage of a number of crops, particularly oats, cassava, and velvet beans.

Average and Condition of Crops for March, 1902, as Compared with March, 1901.

Counties	Upland Cotton	Sea Island Cotton	Corn	Oats	Sugar Cane	Broom Corn	Tobacco	Rye	Rice	Sweet Potatoes	Field Peas	Cassava
	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage
Alachua	....	92	100	90	75	..	....	..	40	100	90	....
Bradford	....	95	110	85	85	110	....	..	....	100	100	....
Brevard	....	...	125	.....	100	..	....	....	.	125	100	100
Calhoun	100	..	100	125	100	...	.....	..	100	110	100	...
Citrus	....	....	105	95	25	..	..	100	....	115	100	....
Clay	......	100	100	100	80	....	.	100	100	100	100	100
Columbia	....	100	100	105	75	....	.....	100	100	100	100	....
Dade	....	.	...	..	100	.....	....		....	100	100	100
DeSoto	...	..	110	80	90	..	50	100	100	100	110	95
Escambia	125	..	150	100	200	..	.	100		100	....	...
Franklin	..	..	80	80	90	.....	.....	..	....	100	75	...
Gadsden	100	100	100	100	125	..	125	..	.	..	....	.
Hernando	...	...	110	150	125	...	....	....	100	100	100	125
Hillsborough	....	......	100	......	100	....	....	....	100	......	...	......
Holmes	95	75	110	125	115	...	95	100	95	105	100	200
Jackson	100	100	100	110	100	110	.	105	100	115	100	125
Jefferson	90	100	110	110	110		.	...	..	100	100	......
LaFayette	....	105	110	85	70	..	....	65	.	100	.	....
Lake	...	...	100	100	....	...	....	25	....	100	.	75
Lee	....	....	100	100	110	..	100	110	100	90	100	100
Leon	110	..	115	105	100	....	100	100	100	110	100	125
Levy	100	100	110	100	75	....	...	100	80	100	90	100
Madison	100	100	100	90	80	..	..	.	75	50	100	....
Manatee	....	..	120	120	100		....	....	100	120	120	100
Marion	100	100	110	110	100	100	70	100	100	110	..	110
Nassau	....	...	100	....	90	..	....	..		110	100	....
Orange	..	....	100	90	90	..	....	...	100	105	...	160
Osceola	...	....	105	100	100	....	....	....	110	110	......	150
Polk	...	.	100	50	100	100	100	200	200	100	100	200
St. Johns	...	..	110	85	80	...	...	.	...	110	....	80
Santa Rosa	100	......	100	100	105	....	....	80	....	100	100	....
Sumter	..	100	110	100	90	..		....	100	.	....	100
Suwannee	....	100	100	80	100	80	80	50		100	...	......
Taylor		75	80	60	50	60	60	70	50	100	...	....
Wakulla	100	100	125	100	100	.....	....	100	..	100	..	....
Walton	95	....	120	85	90	..	.	...	100	100		.
Washington	100	80	100	200	100	....	...	100	100	90	100	125
General averages	101	95	106	100	95	103	86	95	98	102	95	116

Acreage and Condition of Crops—Continued.

Counties	Velvet Beans	Cabbage		Irish Potatoes		Tomatoes		Cucumbers		English Peas	
	Acreage	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition
Alachua	137	90	80	60	50	100	80	50	90	..	....
Bradford	100	85	90	65	60	95	90	60	90	...	..
Brevard	....	100	100	125	80	100	100	100	100	125	125
Calhoun	100	..	....			.	....	...	..	...	...
Citrus	110	100	75	100	100	100	90	100	100	...	...
Clay	125	100	100	100	110	100	100	100	100	100	100
Columbia	150	100	100	100	100	100	100	100	100	100	100
Dade	100	100	105	100	100	100	100	100	100	100	100
DeSoto	150	90	100	105	110	100	90	90	95	100	100
Escambia	....	150	90	150	85	100	90	100	95	100	100
Franklin	....		...	....	.	....	...	....	....		.....
Gadsden	..	..		..	..	....	..	.	.....	....	.....
Hernando	300	100	100			100	90	.....	....	..	.....
Hillsborough	150	10	100	100	100	100	90	.	....	..	...
Holmes	90	100	100	100	110	90	90	100	90	100	105
Jackson	200	...	..	....	..	..	...	..	..	....	...
Jefferson	120	.	....	...	....	..	....	.	...	....	...
Lafayette	90	..	....	....	....	....	..	....	...	....	....
Lake	100	10	75	150	100	75	50		..	100	100
Lee	100	100	100	100	120	100	150	100	110	100	110
Leon	125	75	80	100	95	110	100	100	80	100	100
Levy	100	90	80	100	80	75	60	100	90	100	100
Madison	....	..		100	85	....	...			100	100
Manatee	120	100	100	110	100	110	100	100	100	....	....
Marion	175	100	110	100	110	100	110	100	110	100	100
Nassau	...		...	100	100	...	....	100	100	....	...
Orange	215	150	90	100	100	100	90	90	75	100	100
Osceola	200	200	100	100	100	120	90	100	80	100	100
Polk	150	100	100	100	100	200	100	100	100	100	100
St. Johns	95	50	70	105	100	....	....	....	....	..	...
Santa Rosa	......	100	100	....	..	...	....	..	....	100	100
Sumter	120	110	70	100	75	100	100	100	100	...	....
Suwannee	......	..	.	...	..	....	...	.	...	...	....
Taylor	...	...		.	.	.	..	..	..	...	...
Wakulla	125	..	....	100	100	....	..	....	..	......	...
Walton	135	....	.	......	.	...	....	....	..	....	......
Washington	200	...	....	....	..	..	....	......	....	..	...
Generl aaverages	139	104	92	103	95	103	94	95	90	102	102

Acreage and Condition of Crops—Continued.

Counties	Beans		Egg Plant		Peanuts		Water-melons		Canta-loupes		Straw-berries	
	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition
Alachua	50	70	60	70	60	50	75	90	90	80	100	80
Bradford	75	85	...	....	100	80	100	95	100	95	125	95
Brevard	100	100	...	....	...	....	100	100	....	...	....	....
Calhoun	100	100	....	..	100	100	100	100	...	....	..	....
Citrus	100	100	....	...	105	100	105	90	....	..	100	95
Clay	100	100	.....	....	100	100	100	100	100	100	100	100
Columbia	..	....	....	....	100	....	100	90	110	90	....	....
Dade	100	100	100	100		.	..	.	....		100	100
DeSoto	110	100	90	95	100	100	110	100	90	100	180	110
Escambia	100	50	100	75	100	90	150	100	150	100	100	100
Franklin	...	....	....	....	90	95	90	100	90	100	90	100
Gadsden	..	....	..	..	100	90	100	100	....	....	..	....
Hernando	....	....	....	....	200	85		......	160	100	.....	....
Hillsborough	90	100	..		......	.	60	100	...	...	125	100
Holmes	100	100	95	90	100	120	100	125	100	100	95	109
Jackson	..	....	...	....	100	80	100	100	.....	..	....	....
Jefferson	...	......	...	...	....	....	120	100	120	100	...	...
Lafayette	....	..	...	...	...	.	....	.	....	...	......	....
Lake	75	75	....	..	.....	....	150	100	..		50	50
Lee	100	116	100	110	100	120	100	90	100	120	100	120
Leon	100	85	....	......	100	90	100	100	100	100	100	80
Levy	100	90	.....	......	100	100	100	90	100	90	....	....
Madison	100	100	....	..	....	....	100	80	50	80	100	100
Manatee	...		100	100	105	100	100	100	100	100	120	100
Marion	100	100	100	110	110	110	150	110	150	110	110	110
Nassau	...	..	....	......	....	...	100	110	..	....		...
Orange	85	95	100	80	..	..	100	80	100	90	125	100
Osceola	90	90	70	60	100	100	130	85	100	80	200	120
Polk	....	100	100	100	100	100	200	100	200	100	200	100
St. Johns	100	.	......	....		...	100	85	100	80	100	100
Santa Rosa	..	.	..	.	100	100	110	100	100	100	110	100
Sumter	100	90	....	....	.	....	100	100	100	100	...	....
Suwannee	....	....	....	....	...	..		..	...	..	...	....
Taylor	...	....	..	....	100	85	100	80	..	..	..	....
Wakulla	....	....	..	....	100	100	100	100	...	....	100	110
Walton	....	....	....	..	...	....		....	...	..	....	......
Washington	....	....	...	...	....	..	110	100	...	....	....	....
General averages	94	94	92	90	103	95	108	97	107	96	109	97

Acreage and Condition of Crops—Continued.

Counties	Orange Trees	Lemon Trees	Limes	Gra. Fruit Trees	Bananas	Pine-apples	Guavas	Peaches	Pears
	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition
Alachua	....	....	...	...	....	....	....	90	100
Bradford	....	....	...	....	....	....	....	85	90
Brevard	125	100	100	125	80	...	80	50	...
Calhoun	100	...	......	.	....	....	...	100	....
Citrus	105	....	...	105	......	......	....	110	100
Clay	90	..	...	.. .	....	...	....	125	125
Columbia	...	....	....	...	...	......	.	125	125
Dade	105	100	100	105	100	100	190	....	....
DeSoto	100	90	90	110	100	100	90	110	110
Escambia	....	....	....	....	....	....	....	100	75
Franklin	...	..	....	....	....	....	....	....	....
Gadsden	......	....	....	...	...	....	....	......	....
Hernando	50	...	..	50	....	....	....	100	....
Hillsborough	100	100	....	100	....	......	...	100	....
Holmes	100	....	......	..	..	...	....	125	....
Jackson	....	....	......	....	....	...	....	...	...
Jefferson	....	....	....	....	..	..	...	....	....
Lafayette	......	...	....	...	....	....	....	....	...
Lake	75	....	...	....	....	......	...	100	50
Lee	150	150	150	150	....	110	150	150	110
Leon	. ..	...	....	......	....	......	......	100	50
Levy	50	...	.	......	......	... ..	....	110	100
Madison	....	....	...	....	....	....	....	....	....
Manatee	100	100	100	100	50	100	....	100	....
Marion	110	......	....	...	...	....	....	110	110
Nassau	100	...	....	......	......	....	....	125	125
Orange	110	100	....	125	...	100	...	125	.....
Osceola	120	120	....	125	.. .	50	50	150	200
Polk	200	100	100	100	100	200	100	200	100
St. Johns	100	....	....	....	....	....	....	100	100
Santa Rosa	....	....	....	....	....	....	...	100	100
Sumter	110	....	...	110	....	....	....	150	100
Suwannee	....	......	...	....	....	...	......	150	100
Taylor	....	....	...	....	....	....	...	100	75
Wakulla	....	....	....	....	....	....	...	100	100
Walton	....	..	....	....	..	....	....	100	95
Washington	...	....	....	....	..	...	......	125	80
General averages	105	107	107	106	86	109	95	114	101

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

VALUATIONS.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1901-1902.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen)	15 cents a pound
Potash (as actual potash, K2O)	5½ cents per pound

If caluclated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $2.00 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of a fertilizer. To illustrate this take for example a fertilizer which analyzes as follows:

Available Phosphoric Acid,	6.39x1.00	$ 6.39
Insoluble Phosphoric Acid,	1.15x.20	.23
Ammonia,	4.93x3.00	14.79
Potash,	7.11x1.10	7.82
Mixing and bagging		2.00
		$31.23

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of twenty per cent. can be made in above valuations, *i. e.*:

Available Phosphoric Acid	80 cents per unit
Potash (K2O)	88 cents per unit
Ammonia (or equivalent in nitrogen)	$2.40 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

BUREAU OF FERTILIZERS.

R. E. Rose, State Chemist. MARION G. DONK, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.

(Samples taken by purchaser.)

Name of Fertilizer	Moisture	Phosphoric Acid			Ammonia	Potash (K_2O)	By Whom Sent
		Available	Insoluble	Total			
Bright C. S. Meal.....	7.22	.	.....	3.31	8.44	1.83	Tallahassee Cotton Oil Co., Tallahassee.
Dark C. S. Meal.......	9.55	.... .	....	2.03	4.76	1.65	Tallahassee Cotton Oil Co., Tallahassee.
Fertilizer..............	6.78	.....	.....	2.43	6.12	7.80	H. K. Farrell, Punta Gorda.
Fertilizer..............	7.00	5.79	2.00	7.79	11.50	0.48	E O. Painter Fertilizer Co., Jacksonville
Ground Bone..........	6.00	11.41	9.57	20.98	4.66	.....	Benedict Pineapple Co., Orlando, Fla.
Dissolved Bone Black.	10.60	18.62	0.19	18.81	.....	.....	The Atwood Co., Manavista, Fla.
Extra Fruit & Vine Fert	6.50	6.88	2.69	9.57	2.31	14.18	Southern Fertilizer Co., Orlando, Fla.
Kainit.......... ...	1.88	... .	. ..	...	.....	12.50	Frank Adams, Jasper, Fla.
Double Manure Salt..	3.50	.....	.....	.....	.....	30.92	Frank Adams, Jasper, Fla.
Bone Compound......	16.56	9.42	4.06	13.48	1.83	.....	Goulding Fertilizer Co., Pensacola, Fla.
Nitrate of Soda.....	1.18	.....	.....	.. .	18.43	....	D. R. Knight, Lemon City, Fla.
H. G. Sulphate Potash	1.80	.....	. ..	....	.....	51.73	D R. Knight, Lemon City, Fla.
Dissolved Bone Meal..	3.26	17.80	1.59	19.39	2.77	.....	D. R. Knight, Lemon City, Fla.
Fine Ground Dri'd Fish	11.08	6.87	4.59	11.46	9.41	.....	D. R. Knight, Lemon City, Fla.
Dissolved Bone.......	10.14	21.75	1.07	22.82	....	.....	E. O. Painter Fertilizer Co., Jacksonville.
Fertilizer..............	11.68	8.06	1.28	9.34	2.23	8.36	James Henry, St. Petersburg, Fla
H. G. Tobacco Dust...	5.40	.....	....	.	3.28	10.33	Florida Fert. Mnf. Co., Gainesville, Fla.,
Acid Phosphate.......	11.26	13.72	7.41	21.13	......	.....	Tampa Fertilizer Co., Tampa, Fla
Mixed Fertilizer......	9.96	6.80	0.87	7.75	1.54	12.75	Tampa Fertilizer Co, Tampa, Fla.
Mixed Fertilizer	9.24	6.20	2.19	8.39	3.84	7.49	Tampa Fertilizer Co., Tampa, Fla.
Blood, Bone & Potash.	.....	5.47	2.15	7.62	10.97	0.78	Sterling and Russell, Delray, Fla.
Acid Phosphate Potash and Ammonia..	.....	12.09	1.51	13.60	1.73	4.31	Sterling and Russell, Delray, Fla.
Ashes.	... .	....	... .	......	....	4.24	Sterling and Russell, Delray, Fla.
Blood, Bone & Potash.	. ..	7.45	7.69	15.14	6.48	0.84	Sterling and Russell, Delray, Fla
Fertilizer..............	10.22	7.26	0.52	7.78	2.10	12.62	W. L. Foster, St. Petersburg, Fla
Guano..................	9.18	8.15	2.14	10.29	2.46	2.36	A. L. Willson Co. Quincy. Fla.
Mixed Fertilizer No. 1	9.40	7.24	0.76	8.00	2.27	11.84	Tampa Fertilizer Co., Tampa, Fla.
Mixed Fertilizer No. 2.	9.74	7.15	1.25	8.40	4.21	5.98	Tampa Fertilizer Co., Tampa, Fla.
H. G Sulphate Potash	.....	.....	...	.....	. .	49.28	Mrs. Hellen S. Wright, Orlando, Fla.
H. G. Sulphate Potash	.....	.....	.....	. .	.....	46.60	Mrs. Hellen S. Wright, Orlando, Fla.
H. G. Sulphate Potash	.....	.	.....	... .	. . .	50.04	Mrs. Hellen S. Wright, Orlando, Fla.
Fertilizer..............	.....	6.80	0.42	7.22	2.45	4.72	E. D. Luter, Wildwood, Fla.
Fertilizer..............	6.98	6.51	0.79	7.25	3.43	12.50	J. H. Loyd, Winter Haven, Fla.
Mixed Fertilizer No 1.	12.92	10.07	1.70	11.77	3.21	3.67	S. R. Shomaker, Cotton Dale, Fla.
Mixed Fertilizer No. 2.	11.30	10.92	0.64	11.56	2.25	1.89	S. R. Shomaker, Cotton Dale, Fla.
Palmetto Ashes.......	.....	.....	. ..	...	...	0.57	Arthur Cornwell, Palmetto, Fla.
Ground Garbage.......	1.42	3.56	16.95	20.51	. ...	1.35	Southern Fert. Mnf. Co, Gainesville, Fla.
Fertilizer..............	10.78	3.37	1.31	4.6[illegible]	....	11.81	Schroeder & Arguinbaw, Quincy, Fla.
Fertilizer..............	7.68	7.02	1.58	8.60	4.61	5.01	W. G. Norsworthy, McIntosh. Fla.
Fertilizer..............	.....	8.84	4.63	13.47	3.38	0.56	E. C. Lanier & Co., Miami, Fla.
Fertilizer..............	10.30	2.16	1.73	3.89	. .	13.26	Schroeder & Arguinbaw. Quincy, Fla.
Fertilizer..............	12.65	7.60	2.99	10.59	4.20	4.21	M. Jacoby, Marianna, Fla.

For values see heading "Bureau of Fertilizers."

NOTE.—This department is not aware of the source of the goods, or the names of manufacturers of the "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample" sent in by a dealer or manufacturer, hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on preceding page states the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertililing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper, or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid, and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given, in the table, it has been determined as total phosphoric acid.

DEPARTMEMT OF AGRICULTURE, DIVISION OF CHEMISTRY.

R. E. ROSE, State Chemist. ANALYSIS OF FERTILIZERS. MARION G. DONK, Assistant Chemist.

Samples taken by State Chemist under Section 1, Act approved May 22, 1901.

NAME OF BRAND.	Moisture.	Phos. Acid			Ammonia.	Potash (K_2 O).	GUARANTEED ANALYSIS.						By Whom and Where Manufactured.
		Available.	Insoluble.	Total.			Moisture.	Available. Phos. Acid	Insoluble. Phos. Acid	Total Phos Acid.	Ammonia.	Potash (K_2 O),	
Cotton Seed Meal......	8.42	......	......	2.90	8.61	1 86	......	......	......	2 to 3	8 to9½	1 to 2	Decatur Cotton Oil Co., Decatur, Ala.
Cotton Seed Meal	11.14	......	......	2.49	8.91	1.79	......	......	......	3.22	8.24	1.96	Jefferson Mfg. Co., Jefferson, Ga.
Cotton Seed Meal	9.06	......	..	2.91	8.36	1.92	......	......	......	3 22	8.24	1.96	Alabama Cotton Oil Co., Selma, Ala.
Cotton Seed Meal......	7.60	......	......	2.39	8.34	1.78	......	......	......	3.22	8.24	1.96	Alabama Cotton Oil Co., Mobile, Ala.
Cotton Seed Meal......	8.18	......	..	2.71	8 38	1 97	......	......	......	3.22	8.24	1.96	Alabama Cotton Oil Co., Mobile, Ala.
Cotton Seed Meal	10.10	......	......	2.57	8.24	1.82	......	......	......	2.5to2.8	7.5 8.95	1.5--1.85	Southern Cotton Oil Co.. Selma, Ala.
Cotton Seed Meal......	8.82	......	......	3.31	8.73	2.16	......	......	......	2 to2½	8 to9½	1 to 2	Decatur Cotton Oil Co., Decatur, Ala.
Mape's Fruit and Vine Manure.	9.20	7.42	1.92	9.34	2.48	11.45	8 to 10	5 to 7	2 to 4	......	2 to 3	10 to 12	Mapes' Formula & Peru Guano Co., N. Y.
Ideal Potato Manure......	11 80	7.84	0.91	8.75	4.23	8.30	......	6 to 8	1 to 2	......	4 to 5	8 te 10	Wilson & Toomer Fert. Co, Jacksonville
Amour' S Vegetable Fertilizer..	9.30	8.24	2.36	10.60	4.21	7.5	5 to 10	6 to 8	1 to 2	......	2½to3¼	11 to 13	Armour Fertilizer Works, Jacksonville.
Bradley's Vegetable Fertilizer.	10.75	6.86	2.06	8.92	4.13	5.13	......	6 to 8	......	......	4 to 5	5 to 7	Amer. Agricultural & Chem. Co.. N. Y.
Ideal Fertilizer......	10.40	7.09	1.07	8.11	4.26	7.19	......	5 to 7	......	......	4½t05½	6 to 8	Wilson & Toomer Fert. Co,, Jacksonville
Mape's Fruit and Vine Manure	13.00	7.12	2.03	9.15	2.52	11.32	8 to 10	5 to 7	2 to 4	......	2 to 3	10 to 12	Mapes' Formula & Peru. Guano Co., N. Y.
Mape's Vegetable Manure......	10.68	6.93	2.57	9.50	4.86	4.79	10 to 12	6 to 8	2 to 4	......	5 to 6	4 to 6	Mapes' Formula & Peru. Guano Co, N. Y.
Mape's Orange Tree Fertilizer..	12.20	7,71	2.92	10.63	4.14	3.79	10 4o 12	6 to 8	2 to 4	......	4 to 5	3 to 4	Mapes' Formula & Peru. Guano Co, N.Y.
Ideal Fertilizer......	10.10	7.32	0.94	8,26	4.22	6 69	......	5 to 7	......	......	4½to5½	6 to 8	Wilson & Toomer Fert. Co., Jacksonville
Bradley's Fruit & Vine Fertilizer	12.95	8.57	1.65	10.22	2.55	9.74	......	5½to7½	......	8½-10½	2½to3½	10 to 12	Bradley's Form. & Peru. Guano Co., N.Y.
Fruit and Vine Fertilizer......	15.60	6.81	2.21	9.02	2.11	11.76	8 to 10	6 to 8	1 o 3	......	2 to 4	12 to 14	Tampa Fertilizer Co., Tampa.
Bradley's Nursery Stock......	10.55	7.97	2 64	10.61	4.63	3.52	......	8 to 10	......	10 te 13	4½to5½	3 to 4	Amer. Agricultural & Chem. Co., N. Y.
H. G. Vegetable Fish Guaano...	8.60	6.44	1.41	7.86	4.22	6.17	10 to 12	5 to 7	2 to 4	......	4 to 6	4 to 6	Tampa Fertilizer Co., Tampa.
Ideal Vegetable Manure......	13 95	7.69	0 90	8.50	3.86	9.14	......	6 to 8	1 to 2	..	4 to 5	8 to 10	Wilson & Toomer Fert. Co., Jacksonville.
Mape's Vegetable Manure......	11.15	6.78	2.91	9.69	5.16	5.16	10 to 12	6 to 8	2 to 4	......	5 to 6	4 to 6	Mapes' Formula & Peru. Guano Co., N. Y.
Mape's Fruit and Vine Manure.	10.95	6.67	2.23	8.90	2.32	10.84	8 to 10	5 to 7	2 to 4	......	2 to 3	10 to 12	Mapes' Formula & Peru. Guano Co., N. Y.
Blood, Bone and Potash	11.75	7.70	0.88	8.58	5.38	5.59	5 5o 10	8 to 10	2 to 4	......	5 to 6	7 t0 8	Armour's Fertilizer Works, Jacksonville
Nitrate of Soda,......	1.80	.	......	......	18.32	......	......	......	......	......	17 to 19	......	Wilson & Toomer Fert. Co., Jacksonville
Ideal Fruit and Vine Manure..	9.00	6.24	0.61	6.85	3.55	12.69	......	6 to 8	1 to 3	......	3 to 4	10 to 12	Wilson & Toomer Fert. Co., Jacksonville
Special Orange Tree Manure....	12.35	7.15	2.01	9.16	2.54	9.79	10 to 12	5 to 6	2 to 3	......	2 to 3	10 to 11	Baugh & Sons, Baltimore, Md.
H. G. Tobacco Dust......	8.86	......	......	......	2.31	2 42	8 to 10	......	......	......	1½to3½	1½ to 3½	Armour's Fertilizer Works, Jacksonville.
Osceola Brand Tobacco Dust...	7.90	......		......	1,44	1.61	......	......	......	......	1½ to 3	1 to 5	Wilson & Toomer Fert. Co., Jacksonville
Special Mixture (Tobacco).....	17.8	......	......	......	1.48	4.40	......	......	......	......	......	......	Tampa Fertilizer Co., Tampa.
H. G. Sulphate of Potash, ...	1.44	......	......	......	......	50.28	......	......	......	......	......	48 to 51	Armour's Fertilizer Works, Jacksonville.
Kainit......	5.84	......	......	......	......	12.54	......	......	......	......	......	12 to 14	Wilson & Toomer Fert. Co.. Jacksonville
Ideal Fertilizer......	6.32	7.00	4.58	12.58	3.92	6.32	8 to 10	5 to 7	......	......	4½to5½	6 to 8	Wilson & Toomer Fert. Co., Jacksonville.
H. G. Tobacco Dust......	7.20	......	......	......	2.97	10.06	......	......	......	......	3½	10	Florida Ferilizer Co., Gainesville, Fla,

Acid Phosphate	12.02	15.72	4.07	19.79	......	......	......	15	......	......	......	......	Southern Fertilizer Co., Orlando, Fla.
Dark C. S. Meal	10.12	......	......	2.04	5.44	1.46	8 to 12	......	......	2 to 3	5 to 7	¾ to 1½	Florida Manufacturing Co., Madison.
Dark C. S. Meal	9.10	......	......	2.28	5.03	1.31	8 to 12	......	......	2 to 3	5 to 7	¾ to 1½	Florida Manufacturing Co., Madison
Dixie Brand C. S. Meal	8.16	......	......	2.56	9.11	1.55	......	......	......	......	8½	......	Humphries, Goodwin & Co., Memphis, Tenn
Kainit	9.04	......	......	......	12.26	......	......	......	......	......	......	12 to 13	Little Brothers, Jacksonville
Fish and Potash	4.20	3.48	2.04	5.52	6.89	7.35	10 to 12	2 to 3	3 to 4	......	7 to 8	5 to 6	Florida Fert. Mfg. Co., Gainesville, Fla.
Pineapple Fruiter	4.25	7.24	5.76	13.00	3.42	11.28	10 to 12	4 to 5	6 to 7	......	3 to 4	12 to 13	Florida Fert. Mfg. Co., Gainesville, Fla.
Potato Manure	5.95	5.83	1.97	7.80	3.85	8.95	10 to 12	5 to 6	2 to 3	......	3 to 4	9 to 10	Florida Fert. Mfg. Co., Gainesville, Fla.
Lettuce and Cucumber, Special	5.50	5.00	1.33	6.33	6.60	5.72	10 to 12	5 to 6	1 to 2	......	7 to 8	4 to 5	Florida Fert. Mfg. Co., Gainesville, Fla.
Peruvian Fish Guano. No. 1	5.90	5.25	2.10	7.25	4.81	5.66	19 to 12	5 to 6	1 to 2	......	4½ to 5½	5 to 6	Florida Fert. Mfg. Co., Gainesville, Fla.
Special for Fruit	6.90	6.63	2.21	8.84	3.90	12.60	......	6 to 8	1 to 2	......	4 to 5	12 to 14	Southern Fertilizer Co., Orlando, Fla.
No. 2, Double Strength of Potash	6.25	6.10	1.87	7.97	2.36	9.82	10 to 12	5 to 6	2 to 3	......	1½ to 2	10 to 12	Florida Fert. Mfg. Co., Gainesville, Fla.
Blood, Bone and Potash	6.75	5.66	3.43	9.09	4.54	4.65	10 to 12	4 to 5	2 to 3	......	4 to 5	4 to 5	Florida Fert. Mfg. Co., Gainesville, Fla.
No. 1, Fertilizer	8.00	7.13	5.11	12.24	4.54	3.93	......	5 to 6	2 to 3	......	5 to 6	4 to 5	Southern Fertilizer Co., Orlando, Fla.
No. 2, Fertilizer	7.15	6.62	3.57	10.19	5 07	9.88	......	6 to 7	2 to 3	......	5 to 6	10 to 12	Southern Fertilizer Co., Orlando, Fla.
No. 4, Fertilizer	8.05	6 89	3.72	10.61	3.01	10.30	......	6 to 7	2 to 3	......	3 to 4	10 to 12	Southern Fertilizer Co., Orlando, Fla.
Dissolved Bone	13.05	11.21	3.64	14.85	2.41	..	10 to 12	14 to 15	3 to 4	......	2 to 3	......	Florida Fert. Mfg. Co., Gainesville, Fla.
Cotton Seed Meal	7.65	......	......	2.70	8.46	1.78	6½ to 7½	......	2 to 3	......	8 to 8½	1 to 2	P. A. Smith, Atlanta, Ga.
Armour's Practical Trucker	7.80	7.13	5 83	12.90	3 04	9.25	5 to 10	6 to 7	2 to 3	......	3 to 4	10 to 12	Armour Fertilizer Works, Jacksonville.
Armour's Orange Tree Manure	7.90	8.01	7.43	15.44	3.80	4.09	5 to 10	8 to 10	2 to 4	......	3¼ to 4¼	4 to 5	Armour Fertilizer Works, Jacksonville.
Armour's Fruit and Vine Fert.	6.85	8.12	5.90	14.02	2.87	11.02	5 to 10	6 to 8	1 to 2	......	2¼ to 3¼	10 to 13	Armour Fertilizer Works, Jacksonville.
Armour's Blood, Bone & Potash.	8.70	7.13	4.58	11.71	5.32	7.53	5 to 10	8 to 10	1 to 2	......	5 to 6	7 to 8	Armour Fertilizer Works, Jacksonville.
Armour's Fruit & Root Crop, Spec.	6.40	7.21	3.99	11.20	2.45	5.22	5 to 10	8 to 9	1 to 2	......	2 to 3	5 to 6	Armour Fertilizer Works, Jacksonville.
Armour's Bone Flour	2.70	8.42	15.60	24.02	4.58	......	5 to 10	10 to 14	......	24 to 28	3 to 4	......	Armour Fertilizer Works, Jacksonville.
Armour's Dried Blood	12.35	......	......	......	16 35	..	10 te 13	......	......	......	16 to 17	......	Armour Fertilizer Works, Jacksonville.
H. G. Tobacco Dust	6.80	......	......	..	1.76	1.60	8 to 10	......	......	......	1½ to 3½	1½ to 3	Armour Fertilizer Works, Jacksonville.
Armour's Blood and Bone	7 75	3.73	8.04	11.77	7.26	......	5 to 10	......	......	10 to 12	7 to 8	......	Armour Fertilizer Works. Jacksonville.
H. G Blood and Bone	9.65	5.46	5.91	11.37	9.64	..	5 to 7	......	......	12 to 15	9½ to 10	......	Cudahy Packing Co., Jacksonville.
Blood and Bone	8.05	6.25	9.14	15.39	7.27	......	5 to 7	......	......	15 to 20	6½ to 8	......	Cudahy Packing Co., Jacksonville.
H. G. Blood and Bone	8.45	3.53	3.09	6.60	......	......	......	......	......	4.58	10	......	Armour Packing Co., Chicago, Ill.
Acid Phosphate	7.85	16.92	7.10	24.02	......	......	......	14.00	......	......	......	......	Little Brothers, Jacksonville
Strawberry Fruiter	7.3	5.98	2.41	8.39	2.43	8.91	10 to 12	5 to 6	2 to 3	......	2 to 3	10 to 12	Florida Fert. Mfg. Co., Gainesville, Fla.
Extra Fruit and Vine	6.10	6.37	2.11	8.50	2.31	13.73	8 to 12	6 to 8	......	......	2 to 3	14 to 16	Southern Fertilizer Co., Orlando, Fla.
Cotton Seed Meal	6.80	......	......	2.88	9.43	1.26		......	......	2.80	7.50 8½	1.85	Dothan Cotton Oil Co., Dothan, Ala
Cotton Seed Meal	7.80	......	......	2.60	8.99	1.28	6 5-8.75	......	......	1½ to 3	½ to 9	1 to 2	Trader's Cotton Oil Co., Union Springs, Ala
Cotton Seed Meal	5.96	......	......	2.92	8.29	1.50	......	......	......	2½-2.80	7½-7.85	1½ to 2.85	Southern Cotton Oil Co., Montgomery, Ala
Cotton Seed Meal	8.35	......	......	2.66	7.93	1.38	8.00	......	......	2.10	7 50	2	Alabama Cotton Oil Co., Montgomery, Ala.
H. G. Acid Phosphate	13.60	17.57	1.30	18.87	......	......	12 to 15	15 to 17	1 to 2	......	......	......	Goulding Fertilizer Co., Pensacola, Fla.
A. L. Wilson 6.60 Acid Phosphate	12.30	14.77	3.76	17.53	......	......	12 to 15	14 to 16	1 to 2	......	......	......	Goulding Fertilizer Co., Pensacola, Fla.
Bradley's XXX Phosphate.	8.05	14 38	1.76	16.14	......	......	10 to 20	13 to 15	2 to 3	......	......	......	Bradley Fertilizer Co., Boston, Mass.
Dissolved Bone Phosphate	14.65	13.67	1.51	15.18	......	......	11	13	1.50	......	......	......	Georgia Chemical Works, Augusta, Ga.
Atlas Acid Phosphate	12.95	15 49	2.29	17.78	......	......	12 to 15	13 to 15	2 to 3	......	......	......	Goulding Fertilizer Co., Pensacola, Fla.
Acid Phosphate	13.75	12.34	0.28	12.62	......	......	12 to 16	12 to 14	2 to 4	......	......	......	Virginia, Carolina Chem. Co., Richmond, Va
Bradley's Palmetto Phosphate	7.95	14.89	1.58	16.43	......	......	10 to 12	12 to 24	2 to 3	......	......	......	Bradley Fertilizer Co. Boston, Mass.
Cumberland Bone Super Phos.	16.15	10.71	1.62	12 33	2.07	1.71	10 to 20	8 to 10	1 to 2	......	2 to 3	1 to 2	Cumberland Bone Phos. Co., Portland, Md.
Goulding's Bone Compound	13.96	9.73	3.98	13.71	2.09	1.51	10 to 12	8¾-10¼	1 to 2	......	2 to 2½	1½ to 2	Goulding Fertilizer Co., Pensacola, Fla.
Gem Guano	13.90	10.25	3.18	13.43	1.78	1.84	10 to 12	8 to 10	1 to 2	......	2 to 2½	2 to ½	Goulding Fertilizer Co., Pensacola, Fla.
Lott's Compound	3-45	4.35	8.48	12.83	1.83	12.75	......	5 to 6	......	......	2½ to 2½	12 to 13	H. M. Lott Havana, Fla.
Cumber and Fertilizer	11.80	9.34	2.12	11 46	1 91	2 09	12	8	2	......	2	2	Mutual Fertilizer Co., Savannah, Ga.
Mobile Standard Guano	7.4	9.68	4.74	14 43	2.62	2.62	11 to 16	8 to 10	1½ to 2	......	2 to 3	2 to 3	Mobile Phosphate Co., Mobile, Ala.
Raw Bone Super Phosphate	13.57	10.59	3.30	13.89	2.15	1.73	10 to 15	9 to 10½	1 to 3	......	2 to 3	1½ to 3	Standard Guano & Chem. Co., New Orleans
Goulding's H.G. Acid Phos. & Pot	10.3	14.70	1.42	16 13	..	1.3	10 to 15	12 to 14	1 to 2	......	......	1 to 2	Goulding Fertilizer Co., Pensacola, Fla.

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19	....	....
Sulphate of Ammonia	22 to 24	....	....
Dried Blood	12 to 17	....	....
Concentrated Tankage	12 to 15	1 to 2	....
Bone Tankage	6 to 9	10 to 15	....
Dried Fish Scrap	8 to 11	6 to 8	....
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	14 to 17	1½ to 2	....

PHOSPHATE MATERIALS.

	Pounds per Hundred		
	Ammonia	Available Phosphoric Acid	Insoluble Phosphoric Acid
Florida Rock Phosphate	....	....	33 to 35
Florida Pebble Phosphate	....	....	26 to 32
Florida Superphosphate	....	14 to 19	1 to 6
Ground Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissolved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES.

	Pounds per Hundred			
	Actual Potash	Ammonia	Phosphoric Acid	Lime
Muriate of Potash	50	....	....	....
Sulphate of Potash	48 to 52	....	....	....
Double Sulphate of Potash & Magnesia	26 to 30	....	....	....
Kainit	12 to 12½	....	....	....
Sylvinit	16 to 20	....	....	....
Cotton Seed Hull Ashes	15 to 30	....	7 to 9	10
Wood Ashes, unleached	2 to 8	....	1 to 2	30 to 35
Wood Ashes, leached	1 to 2	....	1 to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4	....	3½
Cow Manure (fresh)	0.40	0 to .41	0.16	0 31
Horse Manure (fresh)	0.53	0 to .60	0.28	0.21
Sheep Manure (fresh)	0.67	1.00	0.23	0.33
Hog Manure (fresh)	0.60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.26	0.70

UNITED STATES DEPARTMENT OF AGRICULTURE.

Climate and Crop Service of the Weather Bureau—Florida Section.

A. J. MITCHELL, SECTION DIRECTOR, JACKSONVILLE, FLA.

Climatological Data for February, 1902.

Stations	Counties	Elevation, feet	Length of record years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days	
NORTHERN SECTION.																		
Archer..........	Alachua.......	92	17	53.3	—5.3	81	27	27	10*	44	3.06	—0.71	1.35	9	9	14	5	nw
Bainbridge..........	Decatur, Ga	119	9	49.6	..	75	1	30	12	31	7.57	....	2 00	7	..	...	...	......
Federal Point.......	St. Johns	10	5	52.3	—4.3	80	1*	28	19	38	3.72	+0.09	1 12	8	15	2	11	sw
Fernandina........	Nassau...... ..	15	....	49.9	....	77	2	29	11	33	4.03	......	1 05	14	8	13	8	......
Fort George†.......	Duval..........	...	14	51.7	—5 1	80	1	30	11	..	....	....	...	...	....	...	.	se
Gainesville	Alachua.........	175	15	52 6	—4 0	85	1	28	10*	39	3.43	—0 14	1.44	7	14	2	12	......
Huntington	Putnam........	50	3	53 2	—3.9	a82	1	29	19	a39	4.60	+0 72	1 44	7	14	5	9	nw
Jacksonville........	Duval............	43	29	50 6	—7 0	77	1	30	18	27	3.64	+0 34	1 61	9	10	9	9	w
Jasper..	Hamilton	165	2	50.1	—2.4	76	1*	a27	10	a36	6.52	+2 19	2 22	6	....	..	...	......
Lake Butler...f....	Bradford	..	4	52 3	—3.3	79	1*	22	19	36	¶3.23	-0 88	..	..	..	....	....	......
Lake City..........	Columbia	201	13	51.4	—4.7	78	1*	28	10	39	4.24	—0 40	1.25	8	5	8	15	w
Macclenny.	Baker.........	140	4	51.1	—4.0	80	1	22	11	46	3.93	—1 33	0 88	9	18	10	0	nw
Micanopy	Alachua..... ...	105	7	53 4	—5.5	81	1*	28	10*	42	4 55	+1 35	2 00	4	20	1	7	......
Middleburg.........	Clay............	...	1	49.6	—3.2	75	27*	22	10	44	3 73	—1 76	2 13	6	11	8	9	nw
§Pinemont ¶... n.	Suwannee......	..	......	51.4	.....	76	27	25	17*	41	4 42	......	1 40	....	....	....	....	......

Climatological Data for February—(Continued.)

Stations	Counties	Elevation, feet	Length of record, years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days.	
Savannah, Ga.	Chatham, Ga.	36	30	47 1	—7.0	71	28	28	11	27	2.34	—0.94	0.75	9	10	10	8	w
St. Augustine	St. Johns	10	52	.....	.....	....	....	..	...	....	2 89	—0 86	1 09	5	..	....	.....	......
Sumner	Levy	......	10	51 1	—5 4	79	1	24	10*	48	3 51	+0 60	1 40	6	11	7	10	nw
Switzerland	St. Johns	....	15	51 8	—1 0	80	1	27	19	39	2 46	—1 65	0 69	9	......	..	......	......
Thomasville, Ga.	Thomas, Ga.	330	23	48 8	—3 7	71	1*	26	11	35	6 18	+1 30	1 91	10	....	....	....	......
Waycross, Ga.	Ware, Ga.	131	19	47 6	—1 9	75	1	26	11*	37	4 32	+0 50	1 30	10	....	....	....	......
	Means	....	....	51 6	—4 2	...	..	..	...	....	3 88	—0 12	....	8	12	7	9	nw
CENTRAL SECTION.																		
Bartow	Polk	122	5	59 0	—1 9	86	1	32	11	46	5 70	+1 [illegible]0	3 59	6	7	17	4	w
Brooksville	Hernando	328	7	52 8	+0 5	79	2*	31	3*	39	4 99	+0 94	2 40	7	12	7	9	w
Clermont	Lake	110	7	58 4	—2 4	84	1	34	11	35	7 29	+3 20	2 78	8	9	14	5	nw
DeLand	Volusia	32	1	53 7	—2 1	81	1	30	11*	40	... ...	......	....	...	...	...	....	......
Eustis	Lake	180	9	56 6	—4 1	83	1	33	11	42	4 37	+0 79	1 34	7	7	5	16	nw
Ft. Meade	Polk	125	16	57 4	—4 3	84	1	29	11*	45	6 95	+4 58	4 00	4	16	9	3	w-nw
Fort Pierce	Brevard	....	...	57 6	—6 2	82	27	31	12	35	3 72	—0 25	1 29	6	13	5	10	nw
Inverness	Citrus	43	1	52 4	—0 9	81	1*	27	10	34	5 25	—0 05	1 70	9	2	15	11	ne-sw
Kissimmee	Osceola	65	8	57 1	—3 5	83	1	33	10*	31	6 07	+1 9[illegible]	2 65	6	....	...	....	......
Malabar	....	......	..	58 6	.....	83	1	30	11	36	4 49	......	1 50	7	17	7	4	sw
Merritt's Island	Brevard	20	18	57 2	—7 0	80	1	35	11	27	3 84	+1 15	2 10	7	25	[illegible]	[illegible]	nw
New Smyrna	Volusia	20	14	54 5	—4 9	84	1	28	19	43	4 75	+1 82	2 00	7	15	7	6	nw
Ocala	Marion	150	11	53 8	—5 6	84	1	26	11	45	4 03	+0 73	1 49	7	9	12	7	w
Orange City	Volusia	50	9	56 1	—4 1	84	1	25	11	46	3 88	+0 92	1 70	6	18	1	9	sw
Orlando	Orange	98	8	56 9	—4 0	81	1	35	11*	36	4 50	+1 51	1 85	9	17	1	10	w

Plant City..........	Hillsborough...	121	7	56.0	—4.8	83	1*	27	11'	45	4.78	+0.95	3.09	5	15	8		nw
Rockwell..........	Marion	....	1	e55 4	— 2	81	27	d28	11	f45	d2 75¶	......	....	..	...	....	.....	......
St. Leo..........	Pasco..	....	...	56 0	—1 2	83	27	29	19	46	4 77	+0 49	2 52	7	12	5	11	w
Tampa..........	Hillsborough. ..	20	11	56 2	—5 0	78	1	34	11	34	5 72	+2 94	3 90	9	7	10	11	w
Tarpon Springs....	Hillsborough ..	20	16	55 2	—6 4	81	1	31	18	32	4 54	+1 02	1 67	11	8	11	9	sn-wn
Titusville	Brevard........	11	......	a55 6	—6 8	a82	1	a30	11	a37	5 02	+1 20	1 66	9	......	....	....	......
	Means......	..	..	56 0	—4 0	...	..	...	..	..	4 98	+1 43	....	7	12	8	8	nw
SOUTHERN SECTION.																		
Avon Park.........	....	....	..	58.8	. . .	84	1*	33	12	37	5.49	......	3.40	7	8	16	4	....
Flamingo....... ..	Monroe.... ...	....	....	63 8	.....	85	7	38	12	33	0 90		0 90	1	18	0	10	......
Havana..........	Cuba.	57	10	68 9	—3 0	64	2	53	13	23	2 16	—0.11	0 84	7	13	11	4	e
Hypoluxo..........	Dade...		4	63 6	—1 4	85	25	38	12	28	5 54	+0 84	2 92	6	.....	....	....	......
Jupiter..........	Dade......	28	13	62 0	—2 0	82	28	38	11	27	4 64	+1 85	1 70	7	9	15	4	nw
Key West	Monroe....	22	30	66 2	—5 0	80	2	53	9	16	3 88	+2 24	2 99	9	15	9	4	nw
Manatee..........	Manatee........	16	18	58 0	—3 5	83	1	34	19	46	5 96	+2 69	4 16	8	9	14	5	nw
Marco...	Lee..............	.....	....	62 4	—0 7	83	1	43	11*	31	3 43	+1 19	1 80	6	19	2	7	w
Miami.........	Dade..........	...	.	63 4	—3 2	87	2	37	12	28	5 30	+2 49	3 55	2	18	4	6	nw
Myers.............	Lee...	....	15	58 9	—5 6	82	27	36	12	37	6 79	+3 30	5 06	9	17	6	5	s-w
Nassau............	N. P. Bahamas.	....	.....	68 6	.. .	82	2	54	12	18	1 87	......	0 98	4	....	.....	....	......
Nocatee...	DeSoto.... ...	3	1	58 8	—2 6	83	1*	32	11	44	5 66	+2 01	4 00	10	20	0	8	......
San Juan....	Puerto Rico....	82	......	. .	....	*	...	..	...	.	....	......	....	..	....	....	....	......
	Means. ...	..	..	61 6	—3 0	...	..	...	..	....	4 76	+2 08	....	6	15	7	6	nw
WESTERN SECTION.																		
Bonifay	Holmes	116	...	50 6	.....	74	1	25	11*	34	10 52	......	2.75	7	7	7	14	nw
Carrabelle.........	Franklin........	12	4	51 8	—0 8	72	28	28	18	29	4 65	—1 39	2 42	5	11	5	12	n
Daphne.... e	Baldwin, Ala...	......	..	c48 4	—4 4	c70	1*	c 3	11	....	6 45	+1 14	1 55	7	..	..	....	nw
DeFuniak Springs..	Walton.......	193	3	48 6	—3 1	75	27	23	11*	37	10 57	+1 88	3 35	9	6	13	9	......
Holt	Santa Rosa. ...	208	...	46 4	.....	71	1*	24	10	37	3 30	......	2 10	4	....	....	.	......
Marianna	Jackson........	85	1	47 1	—0 9	73	27	7	10	34	6 15	+1 29	2 42	7	14	4	10	nw
Mobile..............	Mobile, Ala....	35	30	48 0	—6 0	73	27	28	11	28	8 82	+3 66	2 06	10	9	4	15	n
Montgomery	Montgom'y, Ala	219	28	44 3	—7 0	69	28	21	11	32	8 72	+3 23	4 51	10	7	7	14	nw

Climatological Data for February, 1902—Continued.

Stations	Counties	Elevation, feet	Length of record, years	Temperature, in degrees Fahrenheit: Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Sky: Number clear days	Number partly cloudy days	Number cloudy days	Prevailing direction wind
Pensacola..........	Escambia	56	21	49.2	—7.0	72	1	28	11	25	5.74	+1 04	2.18	9	8	6	14	n
Quincy....	Gadsden	260	....	48 5	—0 7	79	1	24	11	42	6 34	+0 51	1 55	8	10	6	12	nw
St. Andrews Bay...	Washington....	..	3	50 0	—1 8	76	1	25	10	38	3 80	—0 43	1 84	8	17	6	5	w
Stephensville†......	Taylor...........	...	2	....	.. .	...	...	..	...	....	2 85	—2 45	2 00	3	..	....	...	......
Tallahassee.... ...	Leon	193	15	49 7	—4 9	73	1	26	11	31	6 70	+0 97	2 32	8	13	9	6	w
Waukeenah	Jefferson.... ...	....	..	49 0	.. .	71	2	26	11*	34	4 70	......	1 90	5	12	6	10	n·w
Wausau........ ..	Washington ..	250	3	49 4	—1 2	74	27	23	10	37	6 47	—0 11	1 65	9	12	7	9	......
Wewahitchka......	Calhoun.... ...	...	....	46 8	—4 2	75	1	21	10	42	4 79	—1 22	2 00	7	11	2	15	n
	Means...... .	....	..	48 9	—2 8	...	..	.	...	....	5 89	+0 01	......	7	11	6	11	n
	State Means	......	..	54 4	—4 6	...	....	...	...	....	4 88	+1 09	...	7	13	7	8	nw
....	....	.. .	...	....	....	..	....	..	...	..	......	......	....	....	..	...	....	......
....	....	....	..	.. .	......	..	..	..	.	.	....	......	....	......	....	....	....	......

†Thermometers are not self-registering and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily.

*More than one day. ‡Weather Bureau.

¶Not included in means. §McAlpin discontinued: instruments transferred to Pinemont February, 1902.

All records, except stations outside of the State, are used in determining State or district means. but State and district departures are determined by comparison of current data of only such stations as have normals.

a, b, c, etc., following name of station, indicate number of days missing from report.

Salient Climatic Features.

ATMOSPHERIC PRESSURE.

The mean pressure for the month was 29.8 inches, which is 0.11 below normal. The highest observed pressure was 30.37 inches, at Pensacola on the 3d; the lowest was 29.31 inches, at Pensacola on the 27th; monthly range for the State was 1.06 inches.

TEMPERATURE. (Degrees Fahrenheit.)

The monthly mean temperature for the State was 54.4 deg., 4.6 deg. below normal. By sections, the means were: Northern, 51.6 deg.; Southern, 61.6 deg.; Western, 48.9 deg. The highest monthly mean temperature was 66.2 deg., at Key West; the lowest monthly mean temperture was 46.4 deg., at Holt. The highest temperture during the month was 87 deg., at Miami on the 2d; the lowest temperature was 21 deg., at Wewahitchka on the 10th; absolute range for the State was 66 deg.

PRECIPITATION. (Inches and hundredths.)

The average precipitation for the State during the month was 4.88 inches, 1.09 inches above the normal amount. By sections, the averages were: Northern, 3.88 inches; Central, 4.98 inches; Southern, 4.76 inches; Western, 5.89 inches. The greatest monthly amount was 10.57 inches, at De Funiak Spring,s; the least was 0.90 inch, at Flamingo. The greatest amount for any twenty-four hours was 5.06 inches, at Myers on the 20th.

COMPARATIVE TEMPERATURE AND RAINFALL DATA FOR FEBRUARY, WITH WITH DEPARTURES FROM NORMAL, DURING THE PAST ELEVEN YEARS.

The normal temperature for February is 59.0 deg., the normal rainfall is 3.79 inches.

Year	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902
Mean....	61.9	64.9	62.6	52.1	59.0	63.0	57.5	58.9	58.5	55.8	54.4
Departure	+2.9	+5.9	+3.6	-6.9	0.0	+4.0	—1.5	—0.1	—0.5	—3.2	—4.6
Total....	1.40	9.92	2.03	3.19	3.06	6.57	2.04	5.69	4.42	4.44	4.88
Departure	-2.39	+0.13	—1.76	—0.60	—0.73	+2.78	—1.75	+1.90	+0.63	+0.65	+1.09

*8 a. m. readings only.

PRESSURE AND WIND TABLE

Stations	Atmospheric Pressure					Wind Velocity in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville	29.96	30.27	3	29.41	27	6,260	55	s	28	100	34	70
Jupiter	29.98	30.22	11	29.57	28	8,968	48	w	26	97	59	80
Key West	30.00	30.21	11	29.60	27	7,408	36	ne	9	100	57	80
Pensacola	*30.00	30.37	3	29.31	27	7,839	52	sw	27	98	54	78
Tampa	29.99	30.26	3	29.48	27	5,452	49	s	28	97	29	7

COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent. and above in ammonia, 2 per cent. or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its commercial value is as follows:

8 per cent. ammonia @ $3.00	$24 00
2 per cent. available phosphate @ $1.00	2 00
1½ per cent. potash @ $1.10	1.65

The commercial value being in excess of the market value.

There is a quantity of cotton seed meal offered in the State labeled for "Feeding purposes only." These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia	$13 50
1¾ per cent. phosphoric acid	1 75
1½ per cent. potash	1 65
Commercial value	$16 90

These goods are sold at $1.00 to $2.00 per ton less than prime meal. Their relative value is *$10.75 less than prime meal.* There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of ammonia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis, and pay for the actual content of the valuable elements only.

SUGGESTIONS TO PURCHASERS.

By carefully studying the foregoing analysis of fertilizers, noting their actual content of the necessary fertilizing elements, namely: ammonia, potash (K2 O), available and insoluable phosphoric acid,—the only ingredients of any value to the grower—discarding all "Fancy Brands," "Names" or "Trade Marks;" paying no attention to "Equivalents of Bone Phosphate of Lime" or equivalent of "Sulphate or muriate of Potash'" or equivalents of "Nitate of Soda" or "Sulphate of Ammonia;" basing his calculations solely on the agricultural and commercial values of the goods, offered as shown by the percentage of the three elements of fertility required, and comparing the tables and analysis given with the commercial values, the planter, knowing from experience the particular elements his crop or soil demands, can intelligently select the goods required, and approximate closely the commercial value thereof.

The following price list of manural chemicals is quoted by reputable dealers and importers in Jacksonville in lots of one to ten tons.

The same figures can be made n Pensacola or Tampa, for sport cash f. o. b. cars:

	Less than 5 tons	5 to 10 tons	10 tons
High Grade Potash. 90 to 95 per cent. Sulphate (48 to 50 per cent. K_2O)	$52 00	$51 00	$50 00
Sulphate Potash, 48 to 55 per cent. Sulphate (25 to 30 per cent. (K_2O)	32 00	31 00	30 00
Muriate Potash, 80 to 85 per cent. Muriate (42 to 45 per cent. K_2O)	46 00	45 00	44 00
Kainit, 12 to 13 per cent. Actual Potash	15 00	14 50	13 00
Blood and Bone, 6½ per cent Ammonia	26 50	26 00	25 50
Blood and Bone, 7 to 8 per cent. Ammonia	27 50	27 00	26 50
Blood and Bone, 10 per cent. Ammonia	32 00	31 50	31 00
Raw Bone Meal, 2 to 4 per cent Ammonia, 22 to 25 per cent. total Phosphoric Acid	32 00	31 50	31 00
Boneblack, 16 to 18 per cent. available Phosphoric Acid	25 00	24 00	24 00
Acid Phosphate, 14 per cent. Phosphoric Acid	13 00	12 50	12 00
Nitrate Soda, 18 to 19 per cent. Ammonia	47 00	46 50	46 00
Sulphate Ammonia, 24 to 26 per cent. Ammonia	72 00	71 00	70 00
Dried Blood, 17 per cent. Ammonia	47 00	46 50	46 00
Ground Castor Pomace, 6½ to 8½ per cent. Ammonia	21 00	20 50	20 00
Canada Hard Wood Ashes, 2 to 8 per cent K_2O (Potash)	15 00	14 50	14 00
Pulverized Tobacco Stems, 5 to 8 per cent. K_2O (Potash)	15 00	14 50	14 00
Tobacco Stems (Baled) 5 to 8 per cent. K_2O (Potash)	16 00	15 50	15 00
Tobacco Dust, High Grade, 5 to 8 per cent. K_2O (Potash)	21 00	20 50	20 00
Steamed Bone Flour, 3 to 4 per cent. Ammonia, 25 to 28 per cent. Phosphoric Acid	25 00	24 50	24 00
Bright Cotton Seed Meal, 7 to 9 per cent. Ammonia	26 50	26 00	25 00
Dark Cotton Seed Meal, 6 to 8 per cent. Ammonia	22 00	2150	21 00

"Blood and Bone," "Tankage," "Garbage" and numerous other bye products are excellent fertilizers, but depend solely on their "Ammonia," "Phosphoric Acid" and "Potash" for their value, the "odor" or smell has no value. Their analysis is the only safe guide as to their agricultural value.

The phosphoric acid of "Superphosphate," "Acid Phosphate," and "dissolved bone" are identical chemically and agriculturally. Large quantities of "Acid Phosphate" are used and sold as "Dissolved Bone," advantage being taken of a prejudice existing against a name or term, the available phosphoric acid of "Acid Phosphate" is equally valuable as that from "bones," commercially and agriculturally.

AGRICULTURAL DEPARTMENT, STATE OF FLORIDA,
DIVISION OF CHEMISTRY,
Tallahassee, January 1, 1902.

To His Excellency, W. S. Jennings, Governor of Florida, Tallahassee, Fla.

Sir: I have the honor to submit the following report of this Division of the Agricultural Department of the State for the year ending December 31, 1901.

During the year I find that sixty-two (62) analysis of officially drawn samples have been made by this laboratory.

That one hundred and twenty-nine (129) special analysis of mixed fertilizers, cotton seed meal and manurial chemicals sent in by purchasers have been made.

That forty-seven (47) samples of rock, clay, soil, waters, and oils have been examined and reported upon.

A total of two hundred and thirty-eight (238) determinations.

Of the total samples drawn by the State Chemist, I find that of the sixty-two (62) determinations, nine (9) samples are deficient in one ingredient, four samples are deficient in two of the ingredients guaranteed, a total of thirteen (13) samples materially deficient in the materials guaranteed, or twenty per cent. of all samples officially drawn, show a deficiency in one or more of the essential elements as guaranteed by their makers.

I do not attribute this deficiency to a desire to defraud the purchaser, but to a lack of proper mixing of the materials, and possibly a too ready acceptance of statements as to actual manurial value and chemical composition of the raw materials used in the composition of the mixed goods. In several instances the same brand of goods found deficient in one case, has been in another sample found well within the guarantee, and in some instances in excess of the guarantee.

Previous to the enactment and enforcement of the present law (May 22, 1901,) much complaint was justly made on account of the sale within the State of adulterated and fraudulent cotton seed meal, one of the most valuable fertilizers used in the State, and the ammonia base of many mixed fertilizers. Large quantities of adulterated material was sold in the State, analysis by my predecessor shows the value of this material to be but one half that of pure meal either for cattle food or fertilizer. I am pleased to say that recently these complaints have to a large extent ceased, while the analysis of samples both official, and special, fails to show the presence in the State of the goods complained of. Under the present law the consumer can, if he desire, protect himself from adulteration and fraud, by sending samples to this laboratory. I find that there are still a few dealers and jobbers in cotton seed meal disposed to criticise the law, and attempt to evade its provisions and the payment of the analysis fee. I am pleased to say that they do not represent Florida manufacturers, nor manufacturers of legitimate goods, all of whom are strictly complying with the law, recognizing the protection it is to themselves, and their customers, from inferior goods and unfair competition.

Considerable complaint has been made as to "leached" or "difused" tobacco dust or meal. Large quantities of tobacco stems and meal are used in the State, particularly by our pineapple growers, until the enactment of the present law this material was not subject to guarantee, and analysis. Large quantities were sold that had little or no manurial value, much to the damage of the legitimate trade and to the consumer.

This evident fraud has to a large extent been discouraged. With the assistance of the purchaser and legitimate dealer it will soon be entirely prevented. Tobacco dust (or stems) when unleached is a valuable insecticide, and fertilizer, containing 5 to 8 per cent. potash and certain pungent or aromatic properties, when leached or difused, as in the manufacture of "Sheep Dip," for which thousands of tons are used, it has no value whatever as a fertilizer or insecticide.

During the year, all the prominent cities and towns of the State have been visited, the larger seaports and manufacturing cities several times. The various warehouses and factories have been inspected, particularly at Pensacola, Jacksonville, Tampa, Port Tampa, Palatka and Miami, where large distributing warehouses and factories are located; also Gainesville, Orlando and other centers of manufacture and distribution. Many of the larger vegetable, fruit and cotton centers have been visited and samples taken direct from the consumer.

I am pleased to say that generally I find the manufacturer, dealer and consumer satisfied with the present statute and anxious to assist the Department in enforcing its provisions, recognizing the protection it affords to the legitimate manufacturer or honest goods, and the consumer, in preventing the competition of producers of inferior goods and its consequent damage to the grower, and to the trade.

Some complaint is made as to the broad allowance between minimum and maximum guarantees of some makers, in some instances from one to five per cent. of a stated ingredient. It has been suggested that the guarantee should show only the minimum, or actual amount of an ingredient guaranteed. Such has been the ruling of several States having a similar law to our own. This ruling and the forbidding of the statement of equivalents, in addition to the guarantees, has prevented confusion in the minds of the farmers. Seldom a mixed fertilizer exceeds the minimum guarantee, while the maximum is in rare cases reached. A goods bearing a guarantee of from one to five per cent. of a certain ingredient is misleading to the purchaser. He hopes to get, and is charged for, more than the minimum. The facts are, he will receive the minimum guarantee or very little more. Such a guarantee is ,among others, taken from goods in this State recently.

I would respectfully suggest that the Department rule on this important subject, that manufacturers be required to guarantee the minimum, or actual amount of fertilizing ingredients in their goods, stating only those ingredients as specified in the law; that all equivalents be discarded, and prohibited, as they lead to confusion of terms and are used simply to add lrength, and apparent value, to the guaranteed analysis.

This position is also assumed by the Association of Official Agricultural Chemists and the Association of American Agricultural Colleges.

Very respectfully,
R. E. ROSE, State Chemist.

AGRICULTURAL DEPARTMENT, STATE OF FLORIDA,
DIVISION OF CHEMISTRY,
Tallahassee, January 1, 1902.

To His Excellency, W. S. Jennings, Governor of Florida, Tallahassee, Fla.

Sir: I have the honor to submit the following report of the receipts and expenditures of this division of the Agricultural Department of the State for the year ending December 31, 1901:

Total amount received for inspection fees, fertilizer stamps, on fertilizers, cotton seed meal and manurial chemicals.......		$13,072 95
Paid salary of State Chemist.................	$2,000 00	
Paid salary of Assistant State Chemist.........	1,500 00	
Paid traveling expenses 1901................	360 60	
Paid laboratory supplies and apparatus.........	534 81	
Total expenses	$4,395 41—	$4,395 41
Balance to credit of general revenue....................		$8,677 54

Respectfully submitted,
R. E. ROSE, State Chemist.

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no. 75

Vol. 12. No. 76.

FLORIDA

(Department of Agriculture.)

..Monthly Bulletin..

JUNE, 1902.

B. E. McLIN, Commissioner of Agriculture,
TALLAHASSEE, FLA.

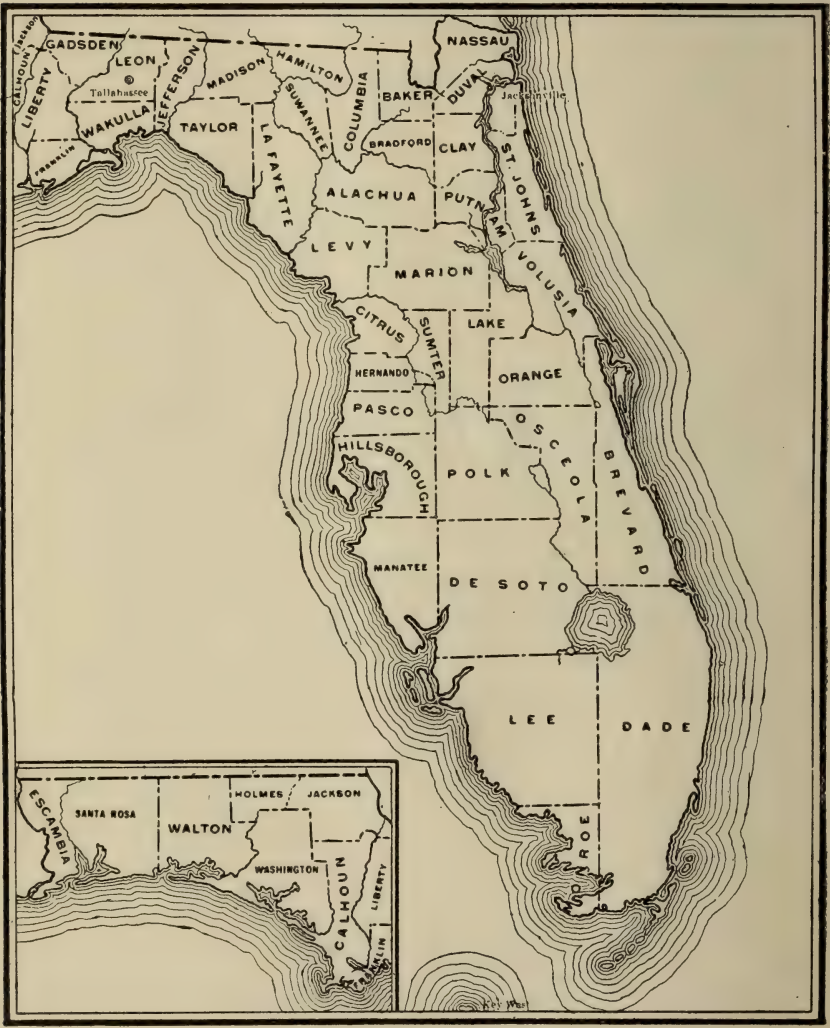
Part I. Crops.
Part II. Fertilizers.
Part III. Weather Report.
Part IV. Miscellaneous.

These Bulletins are furnished free to those requesting them . . .

TALLAHASSEEAN BOOK AND JOB OFFICE, TALLAHASSEE, FLA.

County Map of the State of Florida.

(For the Bulletin.)



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Editorial.

For want of both time and space, we were unable to include in June Bulletin with the report for 1900 the following tables, showing the differences in acreage and value of farm products for the years 1899 and 1900. The comparison is interesting, in as much as it discloses a condition of industrial affairs highly satisfactory. It is a condition that has been believed and asserted with persistence for months, but till now no solid facts have been offered in evidence, establishing the real existence of a condition of prosperity so marked in size of results. It will be noted that there is a reduction in the acreage of 1900 in field crops of 89,919 acres, or about 9 per cent., and an increase of only 566 acres in vegetable crops, a mere bagatelle which cuts no figures in comparison with the largely increased value of the vegetable crops, and we say this because the small increase in acreage cannot possibly account for the large increase in values. With this decrease of 89,919 acres in field crops, we have an increase in value of field crops of $1,961,403, or 24 per cent., over and above that of 1899. The increase in acreage of vegetable and garden products is only 566 acres, or about 3 1-3 per cent., while the increase in the value of the product was $501,321, or 59 per cent. in excess of 1899. So with a net decrease in the acreage of soil products of 89,353 acres, we have a combined increase in values of $2,462,724, or an average of 41½ per cent. in the period of one year. There was an increase, it is true, in the products, but the increase in values was proportionately greater than the increase in products.

In the increase of fruit crops, the relative value is well maintained, and shows $784,591 increase for 1899 in favor of 1900.

In live stock an average increase is shown in number of about 15 per cent., while the increase in value shows a total of $856,608, or over 34 per cent. in favor of 1900, a rate of increase in value of more than 100 per cent. in prospective to the increase in number of stock.

The poultry industry shows an increase over 1899, and in favor of 1900, of $52,882, or 7½ per cent.

The increase in dairy products of 1900 over 1899 is $203,982, or over 25 per cent. In miscellaneous products there is also an increase of $3,838 or practically 3 per cent.

Thus we have a grand total for 1900 of $23,673,313, as against $18,525,528 for 1899, a magnificent increase of $5,147,785, or an average of 28 per cent.—something without a parallel in the history of farming in Florida. Distributed, as this large sum is, over every section of the State, it easily accounts for the great degree of prosperity so much in evidence.

A perusal of the report will disclose many interesting facts.

Tables showing comparative difference in acreage and values for the years 1900 and 1899:

YEAR 1900.

TOTAL ACREAGES OF CROPS.

Field Crops	962,822
Vegetable and Garden Products	16,722
Total Acreage in Cultivation	979,544

TOTAL VALUE OF FARM PRODUCTS.

Table No. 1—Field Crops	$10,134,950
Table No. 2—Vegetable and Garden Products	1,357,629
Table No. 3—Fruit Crops	2,133,723
Table No. 4—Live Stock	8,143,176
Table No. 5—Poultry	758,710
Table No. 6—Dairy Products	1,015,653
Table No. 7—Miscellaneous Products	129,472
Total	$23,673,313

YEAR 1899.

TOTAL ACREAGES OF CROPS.

Field Crops	1,052,741
Vegetable and Garden Products	16,156
Total Acreage in Cultivation	1,068,897

TOTAL VALUE OF FARM PRODUCTS.

Table No. 1—Field Crops	$8,173,547
Table No. 2—Vegetable and Garden Products	856,308
Table No. 3—Fruit Crops	1,349,132
Table No. 4—Live Stock	6,503,408
Table No. 5—Poultry	705,828
Table No. 6—Dairy Products	811,671
Table No. 7—Miscellaneous Products	125,634
Total	$18,525,528

DEPARTMENT OF AGRICULTURE.

Hon. B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

Alachua County—Field crops are generally in fair condition, and if seasons are good, there will be good yields; the fruit and vegetable crops are good, and melons bringing satisfactory prices.

Baker County—Corn has suffered for rain, until the crop will be short, and it is needing rain now; cotton has also been checked by the dry weather, but is looking better at present, though a good deal of it is dying with the black rot; bad stand of field peas, owing to dry weather; peaches and melons are doing finely.

Bradford County—Cotton doing well, also corn, though needing rain; other field crops looking well, with good prospect for average yields; peach and melon crops very good.

Brevard County—Most field crops are planted here in a small way for home use, but all are doing well; fruit trees are in fine condition, but the crop will be a little short.

Calhoun County—Corn has been cut short by the dry weather; cotton and other crops are looking well; peach crop fine.

Citrus County—Crops are doing well; rains have come and helped condition very materially; prospects average good.

Clay County—The want of rain has cut the corn crop short; other field crops are doing well, and the prospect is for good average yields; fruit crop is very good.

Columbia County—Crop prospects are very good, having good rains, though early corn was injured some before the rain came; if rains do not come in excess, the yield of all crops will be better than for a number of years past.

Dade County—Drought in late May, and part of June, caused citrus trees to drop part of their fruit; since June 10th fine rains have started them into new growth, and dropping of fruit has stopped; the fruit trees are in fine condition and good prospect for average crop; other crops did well.

DeSoto County—The rainy season having set in, all crops are improving, and prospects of large yields more certain; fruit trees are doing well and will give a good crop.

Escambia County—Corn is injured by drought, and the storm of the 21st blew it down so badly that there will not be over half a crop; has been very dry through nearly all of June; cotton and other field crops are doing well, and the prospect good.

Franklin County—Corn has suffered some for want of rain, but as a general thing crops are doing well; peach and melon crops are fine.

Gadsden County—The crops of this county are generally in fine condition, and the prospect for large yields is better than for a number of years; the fruit crop is also fine.

HAMILTON COUNTY—The crops in this county have suffered heavily from drought; cotton is not doing well, and corn will be very short; the fruit and melon crops are only a fair average.

HERNANDO COUNTY—Corn has come out all right since the rain begun, and all the other field crops growing well and indicate good yields; vegetable, peach, and melon crops are very fine.

HILLSBOROUGH COUNTY—The drought has been broken in some parts of the county, but in others it is still dry; crops are doing very well generally; the peach and melon crops are fine, and are bringing satisfactory prices.

HOLMES COUNTY—There has been the least rainfall up to this date we have ever seen at this season; it has seriously injured the Irish potato crop and also tobacco; cotton and corn have stood the drought well up to now, but will suffer severely very soon if we get no rain; peach and melon crops fine, and selling for good prices.

JACKSON COUNTY—The field crops in this county, where they have been well worked, are looking well; there has been some complaint of the boll worm; labor is also scarce and with heavy rains has contributed to lower the condition, as also prospective yield.

JEFFERSON COUNTY—Crops have needed rain very much, corn in particular; cotton and other crops are doing very well; melon crops also doing well, prospect good all around.

LAFAYETTE COUNTY—Crops are fair, considering the unusual seasons, and if seasons improve there will be good yields of all crops; fruit crops looking very well.

LAKE COUNTY—The crops are doing well, and indicate good yields; fruit trees doing well, and the peach and melon crops are fine and bringing fine prices; pears are a failure.

LEE COUNTY—All crops are doing as well as could be wished, and will yield well; fruit trees, and crops are very fine and will also turn out good yields; vegetable and melon crops excellent, and are bringing fine prices; we are having plenty of rains to date, and weather delightful.

LEON COUNTY—Corn has suffered for rain, but is improving; cotton has also lost some on account no rain, but is doing better now, and is in fair condition; prospective yield for all crops is fair; melon crops are finest for several years.

LEVY COUNTY—Corn has been damaged by drought; cane crop is short for want of seed, and sweet potato crop will be cut off for lack of vines to plant; on the average, crops are doing very well, and the vegetable and melon crops are promising; there will be an average crop all around.

MADISON COUNTY—The outlook for crops in this county is generally good, and all indications now are that there will be fine yields; the peach and melon crops are much finer than usual.

MANATEE COUNTY—Crops are in fine order; vegetable crops have been good and prices satisfactory; orange trees improving, and there will be good crops generally.

MARION COUNTY—We are having possibly a little too much rain, but not enough to do any material damage, and crops are looking very well; vegetables are yielding well, and bringing satisfactory prices; fruit trees are doing well, and peach and melon crops are unusually good.

NASSAU COUNTY—Dry weather in the fore part of season put crops back, and early crops were cut short, but late rains are fast redeeming the late crops, and making fine hay; peach and melon crops are very fine.

ORANGE COUNTY—We are having unusually dry and hot weather, and orange trees are suffering for rain; there are few potatoes planted yet, and likely to be a small crop; crops are generally in fair condition.

OSCEOLA COUNTY—Sweet potatoes just being planted; corn and other crops were much damaged by drought before rains commenced.

PASCO COUNTY—The crops of this county are in a very fair condition, and promise good yields; vegetable crops good and selling for fair prices; melon, peach and cantaloupe crops are quite good.

POLK COUNTY—All crops are in a flattering condition, with unusually fine prospective yields; fruit trees doing very well; vegetable crops about over and brought good prices; melon crops are unusually fine and selling well.

PUTNAM COUNTY—Irregular seasons have kept crops from being as good as they usually are at this time; rains needed soon or crops will lose greatly.

SANTA ROSA COUNTY—The corn crops of this section are almost a failure, caused by the unprecedented drought; cotton is in fair condition, also other field crops; peach crop fair, and watermelons fine.

SUMTER COUNTY—In some sections of the county we have had but one rain, May 29th; in other sections good showers have fallen; hence in some parts crops are suffering very much, in others crops are good; early corn is good, but late corn poor.

SUWANNEE COUNTY—Crops will average very good, but rain is needed, or soon crops will suffer.

TAYLOR COUNTY—Crops are looking well over most of the county, and with good seasons the yield of all will reach a fair average.

WALTON COUNTY—Thy dry weather is injuring crops of all kinds, and unless it rains right soon, will make almost nothing; peach crop medium.

WASHINGTON COUNTY—Rains for the past two months have consisted of eight showers, and that in streaks; in some portions of the county crops are nearly ruined by drought, while in other sections rain has been sufficient to keep crops in fairly good condition; it is undoubtedly the worst drought we have had in many years in this section; but if rain comes soon we will make nearly an average crop.

Report of Condition and Prospective Yield of Crops for June, 1902, as Compared with an average; also Condition of Fruit Trees.

Counties	Upland Cotton	Sea Island Cotton	Corn	Sugar Cane	Rice	Sweet Potatoes	Field Peas	Cassava	Broom Corn	Egg Plant	Peanuts	Hay
	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition
Alachua	...	80	75	80	...	60	70	....	..	90	90	50
Baker	....	75	65	80	75	100	50	..	....	.....	50	100
Bradford	....	100	75	90	80	80	95		...	...	80	85
Brevard	...		100	100	100	125	100	100	...	..		100
Calhoun	100	100	100	75	..	75	..	..	..	...	100	....
Citrus	......		75	60	...	100	100	..	....	...	.	100
Clay	....	100	75	100	100	90	100	..	..	...	100	50
Columbia	...	105	100	90	100	100	100	..	.	......	100	100
Dade	....	...	..	..	..	100	100	..	....	..	.	....
DeSoto	..	....	95	100	95	95	90	100	100	90	90	95
Escambia	100	....	50	50	75	100	100	100	.....	100	100	50
Franklin	..	...	90	90	90	90	90	90	...	90	90	.
Gadsden	100	105	120	110	100	85	100	500	.	....	100	125
Hamilton	....	50	50	60	50	50	. ..	....	50	..	50	75
Hernando	....	......	100	110	100	80	100	..	...	....	100	......
Hillsborough	....	.	60	50	100	100	100	100	......	...	...	......
Holmes	80	75	95	100	70	95	100	....	...	....	95	65
Jackson	80	80	105	105	100	90	100	....	100	..	90	85
Jefferson	90	90	90	75		75	80	.	....	....	90	85
LaFayette	....	95	100	100	110	90	90	..	..	....	.	...
Lake	....	....	100	75	....	50	50	40	..	....	60	....
Lee	....	....	110	100	100	110	100	100	100	110	100	110
Leon	90	...	90	95	100	85	95	...	...	100	100	90
Levy	100	100	90	60	100	90	100	100	80	..	110	85
Madison	100	105	80	95	100	110	100	..	..	...	110	....
Manatee	....	..	90	90	85	75	70	.	...	..	...	100
Marion	100	110	110	100	100	110	100	110	100	100	100	100
Nassau	..	....	100	85	....	80	.	....	..	....	...	100
Orange	..	...	80	75	75	50	85	90	....	30	...	75
Osceola	..	.	70	80	100		75	90	50	40	80	90
Pasco	....	...	7.	100	80	100	100	80	....	100	......	100
Polk	....	......	90	95	105	....	125	125	...	90	100	100
Putnam		40	50	75	.	50	50	50	....	....	75	....
Santa Rosa	90	...	75	90	80	75	75	100	..	..	100	75
Sumter	....	85	95	8(	75	90	90	90	75	65	95	100
Suwannee	....	100	100	10	75	95	85	.	75	....	...	80
Taylor		75	80	60	70	50	60		..	..	80	...
Walton	75	.	75	85	...	75	.	...	....	....	101	...
Washington	105	100	90	9(	100	100	100	100	....	..	105	110
General averages	94	88	8(	86	90	86	8!	114	81	88	91	88

Condition and Prospective Yield of Crops—Continued.

Counties	Velvet Beans	Guavas	Bananas	Orange Trees	Lemon Trees	Limes	Gra. Fruit Trees	Tobacco		Tomatoes	
	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	100	....	..	90	...	..	......	...	....	90	90
Baker	....	....	....	....	....	...	....	...	....	....	....
Bradford	100	..	......	...	....	....	...	..		....	......
Brevard		....	.	80	80	...	80	.	......	....	....
Calhoun	....	..	....	100	..	..	...	...	..	80	80
Citrus	100	....	...	100	......	..	..	..	....	90	80
Clay	100	.	..	..	....	...	....	....	....	...	....
Columbia	100		..	..	....	.	......	..	..	100	100
Dade	...	100	100	105	105	100	105	...	....	....	....
DeSoto	100	90	90	90	95	95	95	90	80	95	100
Escambia	100	..	....	...	....	....	....	100	100	75	75
Franklin	....	....	...	....	. .	....	....		....	90	90
Gadsden	100	....	..	..	....	....	.	115	100	....	....
Hamilton	60	.....	....	......	...	..	...	.	...	50	50
Hernando	100	..	....		.....	....	....	....	.....	100	100
Hillsborough	100	....	......	50	..	...	50	..	.	100	100
Holmes	....	..	....	....	..	....	.	40	40	60	50
Jackson	100	.	....	....	...	..	......	....	..	....	....
Jefferson	90	....	..	....	..	...	..	....	...	....	....
Lafayette	100	..	..		.	....	....	....	..	....	..
Lake	100		...	100	50	..	100	.	...	..	....
Lee	125	125	125	100	100	100	125	100	100	125	125
Leon	100	......	...	....	....	.....	....	100	100	95	90
Levy	100	...	....	....	.. ..	....	...	...	...	100	100
Madison	....	....	.	....	....	....	....	..	....	110	110
Manatee	100	30	70	85	80	60	80	.	....	100	100
Marion	125	....	....	110	110	100	110	100	90	110	110
Nassau	100	.....	...	90	90	....	..	..	...	100	100
Orange	90	....	...	75		......	50	....	......	90	80
Osceola	90	100	95	95	95	....	90	....	..	80	75
Pasco	100	..	..	100	100	100	100	100	100	70	70
Polk	150	...	...	75	...	25	75	..	....	70	75
Putnam	75	.....	....	50	....	......	50	..	..	....	....
Santa Rosa	100	....	....	....	....	......	....	...	....	75	75
Sumter	95	...	....	100	....	....	100	....	...	75	75
Suwannee	100	....	...	....	....	.	...	..	....	......	....
Taylor	..	....	..	....	....	....	....	...	...	.....	....
Walton	85	..	...	...	....	....	......	..	..	....	....
Washington	110	..	...	...	....	....	...	100	100	100	100
Generl aaverages	10(	89	116	89	90	8:	86	94	90	89	88

Condition and Prospective Yield of Crops—Continued.

Counties	Pears		Peaches		Water-melons		Canta-loupes		Pine-apples		Grapes	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	65	75	70	20	100	50	100	100	...	...	...	....
Baker	..	..	100	100	100	100	....	..	..	.	100	100
Bradford	..	....	60	80	85	90	....	...	...	...	80	90
Brevard	...	....	....	....	..	...	...	..	..	....	....	...
Calhoun	30	20	75	65	100	100	..	......	....	....	.....	...
Citrus	30	20	100	110	100	100	.....	..	...	..	...	....
Clay	60	40	100	100	..		....	....	.....	.....	100	100
Columbia	50	10	100	110	100	100	100	100	....	....	100	90
Dade	....	....	....	...	....	...	.	....	110	125	..	..
DeSoto	100	110	100	120	95	110	90	100	100	150	100	110
Escambia	....	....	100	100	50	50	50	50	..	...	....	....
Franklin	....	....	90	90	100	100	90	90	....	..	90	90
Gadsden	100	100	100	100	....	.....	....	...	..	....	90	90
Hamilton	50	50	50	50	50	50	40	40	..	...	50	50
Hernando	100	100	100	100	100	110	100	150	..	....	100	100
Hillsborough	..	...	100	125	75	75	100	100	...	..	....	..
Holmes	25	25	100	100	100	100	...	...	...	..	95	90
Jackson	50	50	100	75	85	90	...	...	...	..	100	100
Jefferson	.....	....	....	....	100	95	..	...	...	..	...	.....
Lafayette	65	65	85	85	....	....	....	....	..	...	..	...
Lake	.....	.	100	100	100	125	75	75	...	..	100	100
Lee	100	100	120	120	150	150	150	150	125	125	100	100
Leon	50	20	65	50	100	125	100	125	....	..	100	100
Levy	40	40	60	60	90	90	75	70	...	...	...	....
Madison	10	10	105	105	125	125	100	100	..	....	95	95
Manatee	....	..	100	115	100	110	100	90	...	.	85	90
Marion	90	90	100	110	100	150	110	150	100	100	100	100
Nassau	60	60	90	100	100	100	100	100	.	.	100	100
Orange	100	95	100	100	90	80	75	80	90	100	..	...
Osceola	100	150	100	150	90	90	75	80	60	40	80	90
Pasco	40	40	100	100	100	100	100	100	..	....	....	...
Polk	.	...	150	150	115	115	110	110	....	..	80	80
Putnam	10	10	90	90	50	50	...	....	..	....	80	80
Santa Rosa	50	50	75	75	90	90	...	..	...	....	100	100
Sumter	70	70	100	125	100	100	100	100	....	..	85	85
Suwannee	.	...	..	..	100	100	....	...	....	....	90	100
Taylor	....	..	......	.....	..	...	...	..	....	....	...	..
Walton	...	...	75	75	50	50	......	..	....	....	..	....
Washington	.....	....	100	100	90	85	90	75	.	..	....	....
General averages	60	58	93	95	93	95	88	97	98	105	92	93

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

VALUATIONS.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1901-1902.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen)	15 cents a pound
Potash (as actual potash, K2O)	5½ cents per pound

If caluclated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $2.00 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of a fertilizer. To illustrate this take for example a fertilizer which analyzes as follows:

Available Phosphoric Acid,	6.39x1.00	$ 6.39
Insoluble Phosphoric Acid,	1.15x.20	.23
Ammonia,	4.93x3.00	14.79
Potash,	7.11x1.10	7.82
Mixing and bagging		2.00
		$31.23

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of twenty per cent. can be made in above valuations, *i. e.*:

Available Phosphoric Acid	80 cents per unit
Potash (K2O)	88 cents per unit
Ammonia (or equivalent in nitrogen)	$2.40 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

BUREAU OF FERTILIZERS.

R. E. Rose, State Chemist. Marion G. Donk, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.

(Samples taken by purchaser.)

Name of Fertilizer	Moisture	Phosphoric Acid			Ammonia	Potash (K_2O)	By Whom Sent
		Available	Insoluble	Total			
Bright C. S. Meal.....	7.22	.	.....	3.31	8.44	1.83	Tallahassee Cotton Oil Co., Tallahassee.
Dark C. S. Meal.......	9.55	....	....	2.03	4.76	1.65	Tallahassee Cotton Oil Co., Tallahassee.
Fertilizer.............	6.78	...	....	2.43	6.12	7.80	H. K. Farrell, Punta Gorda.
Fertilizer.............	7.00	5.79	2.00	7.79	11.50	0.48	E. O. Painter Fertilizer Co., Jacksonville
Ground Bone...... ...	6.00	11.41	9.57	20.98	4.66	.....	Benedict Pineapple Co., Orlando, Fla.
Dissolved Bone Black.	10.60	18.62	0.19	18.81	.....	....	The Atwood Co., Manavista, Fla.
Extra Fruit & Vine Fert	6.50	6.88	2.69	9.57	2.31	14.18	Southern Fertilizer Co., Orlando, Fla.
Kainit.................	1.88	.. ..	.. ..	...	.....	12.50	Frank Adams, Jasper, Fla.
Double Manure Salt..	3.50	.....	.....	.....	.....	30.92	Frank Adams, Jasper, Fla.
Bone Compound	16.56	9.42	4.06	13.48	1.83	.....	Goulding Fertilizer Co., Pensacola, Fla.
Nitrate of Soda.....	1.18	....	.....	.. .	18.43	.	D. R. Knight, Lemon City, Fla.
H. G. Sulphate Potash	1.80	....	.	.	....	51.73	D. R. Knight, Lemon City, Fla.
Dissolved Bone Meal..	3.26	17.60	1.79	19.39	2.77	.....	D. R. Knight, Lemon City, Fla.
Fine Ground Dried Fish	11.08	6.87	4.59	11.46	9.41	.....	D. R. Knight, Lemon City, Fla.
Dissolved Bone.	10.14	21.75	1.07	22.82	...	.....	E. O. Painter Fertilizer Co., Jacksonville.
Fertilizer..............	11.68	8.06	1.28	9.34	2.23	8.36	James Henry, St. Petersburg, Fla.
H. G. Tobacco Dust...	5.40	.....	.	.	3.28	10.33	Florida Fert. Mnf. Co., Gainesville, Fla..
Acid Phosphate.......	11.26	13.72	7.41	21.13	.....	....	Tampa Fertilizer Co., Tampa, Fla
Mixed Fertilizer......	9.96	6.80	0.87	7.75	1.54	12.75	Tampa Fertilizer Co., Tampa, Fla.
Mixed Fertilizer......	9.24	6.20	2.19	8.39	3.84	7.49	Tampa Fertilizer Co., Tampa, Fla.
Blood, Bone & Potash.	.....	5.47	2.15	7.62	10.97	0.78	Sterling and Russell, Delray, Fla.
Acid Phosphate Potash and Ammonia..	.....	12.09	1.51	3.60	1.73	4.31	Sterling and Russell, Delray, Fla.
Ashes.	. . .	....	.	.....	. .	4.24	Sterling and Russell, Delray, Fla.
Blood, Bone & Potash.	....	7.45	7.69	15.14	6.48	0.84	Sterling and Russell, Delray, Fla
Fertilizer.....	10.22	7.26	0.52	7.78	2.10	12.62	W. L. Foster, St. Petersburg, Fla.
Guano................	9.18	8.15	2.14	10.29	2.46	2.36	A. L. Willson Co., Quincy, Fla.
Mixed Fertilizer No. 1	9.40	7.24	0.76	8.00	2.27	11.84	Tampa Fertilizer Co., Tampa, Fla.
Mixed Fertilizer No. 2.	9.74	7.15	1.25	8.40	4.21	5.98	Tampa Fertilizer Co., Tampa, Fla.
H. G. Sulphate Potash	.....	.....	...	.....	. .	49.28	Mrs. Hellen S. Wright, Orlando, Fla.
H. G. Sulphate Potash	.....	... .	.....	. .	.....	46.60	Mrs. Hellen S. Wright, Orlando, Fla.
H. G. Sulphate Potash	.....	.	.....	...	. . .	50.04	Mrs. Hellen S. Wright, Orlando, Fla.
Fertilizer.............	.....	6.80	0.42	7.22	2.45	4.72	E. D. Luter, Wildwood, Fla.
Fertilizer.............	6.98	6.51	0.79	7.25	3.43	12.50	J. H. Loyd, Winter Haven, Fla.
Mixed Fertilizer No 1.	12.92	10.07	1.70	11.77	3.21	3.67	S. R. Shomaker, Cotton Dale, Fla.
Mixed Fertilizer No. 2	11.30	10.92	0.64	11.56	2.25	1.89	S. R. Shomaker, Cotton Dale, Fla.
Palmetto Ashes.......	.....	.....	... ..	.....	.....	0.57	Arthur Cornwell, Palmetto, Fla.
Ground Garbage.......	1.42	3.56	16.95	20.5	.....	1.35	Southern Fert. Mnf. Co., Gainesville, Fla.
Fertilizer.......	10.78	3.37	1.31	4.6	.....	11.81	Schroeder & Arguinbaw, Quincy, Fla.
Fertilizer...	7.68	7.02	1.58	8.60	4.61	5.01	W. G. Norsworthy, McIntosh, Fla.
Fertilizer.............	.....	8.84	4.63	13.47	3.38	0.56	E. C. Lanier & Co., Miami, Fla.
Fertilizer.............	10.30	2.16	1.73	3.89	.	13.26	Schroeder & Arguinbaw, Quincy, Fla.
Fertilizer.............	12.65	7.60	2.99	10.59	4.20	4.21	M. Jacoby, Marianna, Fla.
Cotton Seed Meal, 2d class for feeding.....	.....	.....	.....	... .	4.66	.....	Booker & Gentry, Memphis, Tenn.
Cotton Seed Meal.....	6.65	......	1.82	2.65	7.76	1.60	Southern Cotton Oil Co., Washington, Ga.
Mixed Fertilizer.......	7.45	6.45	1.82	8.27	2.29	10.32	Marshall & Beebe, Fort Lauderdale, Fla.
Blood and Bone.......	8.75	7.07	7.75	14.82	8.70	.....	Hardec Bros., Jensen, Fla.
Tobacco Dust.........	13.75	... .	... .	.....	1.30	5.92	B. F. Hardesty, St. Sebastian, Fla.
Cotton Seed Meal.....	8.25	... .	.....	2.72	8.45	1.73	Florida Grocery Co., Jacksonville, Fla.
Tobacco Dust....... ..	.....	.....	.....	.....	2.25	2.00	Sterling & Russell, Delray, Fla.
Cotton Seed Meal.....	.....	....	..	2.53	8.08	1.72	Mellan Crosby Co., Pensacola, Fla.
Cotton Seed Meal.....	.....	....	.	3.21	9.30	2.09	R. J. Brewten, McDavid, Fla.
Strawberry Fertilizer	8.40	6.22	2.07	8.29	1.86	1.33	W. W. Valentine, Antioch, Fla.
Mixed Fertilizer......	.	9.13	1.60	10.73	3.04	10.68	F. S. Dunklin, Lakeland, Fla.
Cotton Seed Meal....	.....	.....	... .	.....	5.61	.....	Florida Cotton Oil Co., Jacksonville, Fla.
Mixed Fertilizer......	.....	6.23	2.22	8.45	2.55	6.69	M. O. Donell, West Tampa, Fla.

BUREAU OF FERTILIZERS—Continued.

Name of Fertilizer.	Moisture	Phosphoric Acid Available	Insoluble	Total	Ammonia	Potash (K_2O)	By Whom Sent
Mixed Fertilizer.......	6.70	6.39	1.60	7 99	1.51	10.92	E. A. Wilcox, Anona, Fla.
Mixed Fertilizer.......	....	4 84	8.26	8.10	5.15	1[illegible].88	Clark & Co., Dania, Fla.
Mixed Fertilizer......	5.75	6.0	1.21	7.26	1.85	13.64	D. W. Brown, Arcadia, Fla.
Cotton Seed Meal.....	.....	....	. .	2.77	8.5[illegible]	2.58	Florida Tobacco Co., Quincy, Fla.
Fertilizer..............	9.65	11.47	1.66	13.13	.....	5.59	C. F. Cope, Chipley, Fla.
Armour's Vegetable Fertilizer............	7.35	6 28	3.21	9.49	4.46	9.29	Armour Fertilizer Works, Jacksonville.
Armour's Fruit & Root Crop Special.........	9.45	7.35	2.11	9.46	2.45	6.74	Armour Fertilizer Works, Jacksonville.
Sulphate of Ammonia.	3 55	.....	.....	.....	25.05	.....	Willson & Toomer Fert. Co., Jacksonville.
Sulphate of Ammonia.	8.60	.....	.....	.....	23.61	.....	Willson & Toomer Fert. Co., Jacksonville.
Mixed Fertilizer (Sweepings).........	8.65	5.55	2.04	7.59	3.66	7.94	Willson & Toomer Fert. Co., Jacksonville.
Nitrate of Soda.........	1.70	.....	.....	.....	18.48	.....	Willson & Toomer Fert. Co., Jacksonville.
Sulphate of Potash...	17.40	.....	.....	.....	.....	24.00	Willson & Toomer Fert. Co., Jacksonville.
Dried Blood...........	11.15	.....	.....	.....	16.29	.....	R. M. Hebbert, Jensen, Fla.
Ground Steamed Bone	3.10	8.64	15.18	23.82	4.68	.....	R. M. Hebbert, Jensen, Fla.
H. G. Tobacco Dust...	.10	.....	.....	....	2.50	1.80	R. M. Hebbert, Jensen, Fla
Tobacco Dust........	7.23	.....	....,	.....	3.60	6.75	E. O. Painter Fert Co., Jacksonville, Fla.

For values see heading "Bureau of Fertilizers."

Note.—This department is not aware of the source of the goods, or the names of manufacturers of the "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample" sent in by a dealer or manufacturer, hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on preceding page states the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertililing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper, or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid, and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given, in the table, it has been determined as total phosphoric acid.

DEPARTMEMT OF AGRICULTURE, DIVISION OF CHEMISTRY.

R. E. ROSE, State Chemist. ANALYSIS OF FERTILIZERS. MARION G. DONK, Assistant Chemist.

Samples taken by State Chemist under Section 1, Act approved May 22, 1901.

NAME OF BRAND.	Moisture.	Phos. Acid			Ammonia.	Potash (K_2O).	GUARANTEED ANALYSIS.						By Whom and Where Manufactured.
		Available.	Insoluble.	Total.			Moisture.	Available. Phos. Acid	Insoluble. Phos. Acid	Total Phos Acid.	Ammonia.	Potash (K_2O),	
Cotton Seed Meal	8.42	......	.. ..	2.9	8.61	1.80	....	......	....	2 to 3	8 to 8½	1 to 2	Decatur Cotton Oil Co., Decatur, Ala.
Cotton Seed Meal	11.14	......	......	2.49	8.91	1.79	......	....	......	3.22	8.24	1.96	Jefferson Mfg. Co., Jefferson, Ga.
Cotton Seed Meal	9.06	......		2.91	8.36	1.92	.... ..	.. ....	......	3.22	8.24	1.96	Alabama Cotton Oil Co., Selma, Ala.
Cotton Seed Meal	7.60	......	......	2.39	8.34	1.78	....	......	....	3.22	8.24	1.96	Alabama Cotton Oil Co., Mobile, Ala.
Cotton Seed Meal	8.18	... ..	..	2.71	8.38	1.97	....	....	......	3.22	8.24	1.96	Alabama Cotton Oil Co., Mobile, Ala.
Cotton Seed Meal	10.10	......	......	2.57	8.24	1.82	....	.. ....	....	2.5 to 2.8	7.5 to 8.9	1.5--1.85	Southern Cotton Oil Co., Selma, Ala.
Cotton Seed Meal	8.82	......	......	3.31	8.73	2.16	....	....	....	2 to 2½	8 to 9½	1 to 2	Decatur Cotton Oil Co., Decatur, Ala.
Mape's Fruit and Vine Manure	9.20	7.42	1.9	9.34	2.48	11.45	8 to 10	5 to 7	2 to 4	....	2 to 3	10 to 12	Mapes' Formula & Peru Guano Co., N. Y.
Ideal Potato Manure	11.80	7.84	0.91	8.75	4.23	8.39	....	6 to 8	1 to 2	....	4 to 5	8 to 10	Wilson & Toomer Fert. Co., Jacksonville
Bradley's Vegetable Fertilizer	10.75	6.86	2.06	8.92	4.13	5.13	....	6 to 8	....	....	4 to 5	5 to 7	Amer. Agricultural & Chem. Co., N. Y.
Ideal Fertilizer	10.40	7.09	1.07	8.11	4.26	7.19	.... ..	5 to 7	....	....	4½ to 5½	6 to 8	Wilson & Toomer Fert. Co., Jacksonville
Mape's Fruit and Vine Manure	13.00	7.12	2.03	9.15	2.52	11.32	8 to 10	5 to 7	2 to 4	... .	2 to 3	10 to 12	Mapes' Formula & Peru Guano Co., N. Y.
Mape's Vegetable Manure	10.68	6.93	2.57	9.50	4.86	4.79	10 to 12	6 to 8	2 to 4	....	5 to 6	4 to 6	Mapes' Formula & Peru. Guano Co., N. Y.
Mape's Orange Tree Fertilizer	12.20	7,71	2.92	10.63	4.14	3.79	10 to 12	6 to 8	2 to 4	......	4 to 5	3 to 4	Mapes' Formula & Peru Guano Co., N.Y.
Ideal Fertilizer	10.10	7.32	0.94	8,26	4.22	6.69	....	5 to 7	....	....	4½ to 5½	6 to 8	Wilson & Toomer Fert. Co., Jacksonville
Bradley's Fruit & Vine Fertilizer	12.95	8.57	1.65	0.22	2.55	9.74	.... ..	5½ to 7½	......	8½-10½	2½ to 3½	10 to 12	Bradley's Form. & Peru. Guano Co., N.Y.
Fruit and Vine Fertilizer	15.60	6.81	2.21	9.02	2.11	11.76	8 to 10	6 to 8	1 to 3	....	2 to 4	12 to 14	Tampa Fertilizer Co., Tampa.
Bradley's Nursery Stock	10.55	7.97	2.64	10.61	4.63	3.52	....	8 to 10	....	10 to 13	4½ to 5½	3 to 4	Amer. Agricultural & Chem. Co., N. Y.
H. G. Vegetable Fish Guano	8.60	6.44	1.41	7.86	4.22	6.17	10 to 12	5 to 7	2 to 4	......	4 to 5	4 to 6	Tampa Fertilizer Co., Tampa.
Ideal Vegetable Manure	13.95	7.60	0.90	8.50	3.86	9.14	....	6 to 8	1 to 2	..	4 to 5	8 to 10	Wilson & Toomer Fert. Co., Jacksonville.
Mape's Vegetable Manure	11.15	6.78	2.91	9.69	5.16	5.16	10 to 12	6 to 8	2 to 4	.....	5 to 6	4 to 6	Mapes' Formula & Peru. Guano Co., N. Y.
Mape's Fruit and Vine Manure	10.95	6.67	2.23	8.9	2.32	10.84	8 to 10	5 to 7	2 to 4	....	2 to 3	10 to 12	Mapes' Formula & Peru. Guano Co., N. Y.
Blood, Bone and Potash	11.75	7.70	0.88	8.58	5.38	5.59	5 to 10	8 to 10	2 to 4	....	5 to 6	7 to 8	Armour's Fertilizer Works, Jacksonville
Nitrate of Soda	1.80		......	..	18.32	......	....	....	....	....	17 to 19	.....	Wilson & Toomer Fert. Co., Jacksonville
Ideal Fruit and Vine Manure	9.00	6.24	0.61	6.85	3.55	12.69	.....	6 to 8	1 to 3	.. ...	3 to 4	10 to 12	Wilson & Toomer Fert. Co., Jacksonville
Special Orange Tree Manure	12.35	7.15	2.01	9.16	2.54	9.79	10 to 12	5 to 6	2 to 3	....	2 to 3	0 to 11	Baugh & Sons, Baltimore, Md.
H. G. Tobacco Dust	8.86	..	......	......	2.31	2.42	8 to 10	......	....	....	1½ to 3½	1½ to 3½	Armour's Fertilizer Works, Jacksonville.
Osceola Brand Tobacco Dust	7.90	......		... ..	1.44	1.63	......	....	......	....	1½ to 3	1 to 5	Wilson & Toomer Fert. Co., Jacksonville
Special Mixture (Tobacco)	17.8	......	......	......	1.48	4.40	......	....	......	....	....	....	Tampa Fertilizer Co., Tampa.
H. G. Sulphate of Potash	1.44	.. ..	......	......	... ..	50.28	... . .	....	......	....	. ....	48 to 51	Armour's Fertilizer Works, Jacksonville.
Kainit	5.84	......	......	......	....	12.54	....	....	. .....	....	....	12 to 14	Wilson & Toomer Fert Co., Jacksonville.
Ideal Fertilizer	6.32	7.00	4.58	12.58	3.92	6.32	8 to 10	5 to 7	.... ..	....	4½ to 5½	6 to 8	Wilson & Toomer Fert. Co., Jacksonville.
H. G. Tobacco Dust	7.20	......	.... .	......	2.97	10.06	....	... ...	....	... ...	3½	10	Florida Fertilizer Co., Gainesville, Fla.

Acid Phosphate	12.07	15.72	4.07	19.79	...	...	...	15	...	...	...	...	Southern Fertilizer Co., Orlando, Fla.
Dark C. S. Meal	10.12	...	...	2.04	5.44	1.46	8 to 12	...	...	2 to 3	5 to 7	¾ to 1½	Florida Manufacturing Co., Madison.
Dark C. S. Meal	9.10	...	...	2.28	5.03	1.31	8 to 12	...	...	2 to 3	5 to 7	¾ to 1½	Florida Manufacturing Co., Madison
Dixie Brand C. S. Meal	8.16	...	...	2.56	9.11	1.55	...	...	...	...	8½	...	Humphries, Goodwin & Co., Memphis, Tenn
Kainit	9.04	...	...	...	12.26	...	...	...	...	...	...	12 to 13	Little Brothers, Jacksonville
Fish and Potash	4.20	3.48	2.04	5.52	6.89	7.35	10 to 12	2 to 3	3 to 4	...	7 to 8	5 to 6	Florida Fert. Mfg. Co., Gainesville, Fla.
Pineapple Fruiter	4.25	7.24	5.76	13.00	3.42	11.28	10 to 12	4 to 5	6 to 7	...	3 to 4	12 to 13	Florida Fert. Mfg. Co., Gainesville, Fla.
Potato Manure	5.95	5.83	1.97	7.80	3.85	8.95	10 to 12	5 to 6	2 to 3	...	3 to 4	9 to 10	Florida Fert. Mfg. Co., Gainesville, Fla.
Lettuce and Cucumber, Special	5.50	5.00	1.33	6.33	6.60	5.72	10 to 12	5 to 6	1 to 2	...	7 to 8	4 to 5	Florida Fert. Mfg. Co., Gainesville, Fla.
Peruvian Fish Guano. No. 1	5.90	5.25	2.00	7.25	4.81	5.66	10 to 12	5 to 6	1 to 2	...	4½ to 5½	5 to 6	Florida Fert. Mfg. Co. Gainesville, Fla.
Special for Fruit	6.90	6.63	2.21	8.84	3.90	12.60	...	6 to 8	1 to 2	...	4 to 5	12 to 14	Southern Fertilizer Co., Orlando, Fla.
No. 2, Double Strength of Potash	6.25	6.10	1.87	7.97	2.36	9.82	10 to 12	5 to 6	2 to 3	...	1½ to 2	10 to 12	Florida Fert. Mfg. Co., Gainesville, Fla.
Blood, Bone and Potash	6.75	5.66	3.43	9.09	4.54	4.65	10 to 12	4 to 5	2 to 3	...	4 to 5	4 to 5	Florida Fert. Mfg. Co., Gainesville, Fla.
No. 1, Fertilizer	8.00	7.13	5.11	12.24	4.54	3.93	...	5 to 6	2 to 3	...	5 to 6	4 to 5	Southern Fertilizer Co., Orlando, Fla.
No. 2, Fertilizer	7.15	6.62	3.57	10.19	5.07	9.88	...	6 to 7	2 to 3	...	5 to 6	10 to 12	Southern Fertilizer Co., Orlando Fla.
No. 4, Fertilizer	8.05	6.89	3.72	10.61	3.01	10.30	...	6 to 7	2 to 3	...	3 to 4	10 to 12	Southern Fertilizer Co., Orlando, Fla.
Dissolved Bone	13.05	11.21	3.64	14.85	2.41	...	10 to 12	14 to 15	3 to 4	...	2 to 3	...	Florida Fert. Mfg. Co., Gainesville, Fla.
Cotton Seed Meal	7.65	...	...	2.70	8.46	1.78	6½ to 7½	...	2 to 3	...	8 to 8½	1 to 2	P. A. Smith, Atlanta, Ga.
Armour's Practical Trucker	7.80	7.13	5.83	12.90	3.04	9.25	5 to 10	6 to 7	2 to 3	...	3 to 4	10 to 12	Armour Fertilizer Works, Jacksonville.
Armour's Orange Tree Manure	7.90	8.01	7.43	15.44	3.80	4.09	5 to 10	8 to 10	2 to 4	...	3¼ to 4¼	4 to 5	Armour Fertilizer Works, Jacksonville.
Armour's Fruit and Vine Fert.	6.85	8.12	5.90	14.02	2.87	11.02	5 to 10	6 to 8	1 to 2	...	2¼ to 3¼	10 to 13	Armour Fertilizer Works, Jacksonville.
Armour's Blood, Bone & Potash	8.70	7.13	4.58	11.71	5.32	7.53	5 to 10	8 to 10	1 to 2	...	5 to 6	7 to 8	Armour Fertilizer Works, Jacksonville.
Armour's Fruit & Root Crop, Spec.	6.40	7.21	3.99	11.20	2.45	5.22	5 to 10	8 to 9	1 to 2	...	2 to 3	5 to 6	Armour Fertilizer Works, Jacksonville.
Armour's Bone Flour	2.70	8.42	15.60	24.02	4.58	...	5 to 10	10 to 14	...	24 to 28	3 to 4	...	Armour Fertilizer Works, Jacksonville.
Armour's Dried Blood	12.35	...	...	...	16.35	...	10 to 13	...	...	...	16 to 17	...	Armour Fertilizer Works, Jacksonville.
H. G. Tobacco Dust	6.80	...	...		1.76	1.60	8 to 10	...	...	...	1½ to 3½	1½ to 3	Armour Fertilizer Works, Jacksonville.
Armour's Blood and Bone	7.75	3.73	8.04	11.77	7.26	...	5 to 10	...	...	10 to 12	7 to 8	...	Armour Fertilizer Works, Jacksonville.
H. G. Blood and Bone	9.65	5.46	5.91	11.37	9.64	..	5 to 7	...	...	12 to 15	9½ to 10	...	Cudahy Packing Co., Jacksonville.
Blood and Bone	8.05	6.25	9.14	15.39	7.27	...	5 to 7	...	...	15 to 20	6½ to 8	...	Cudahy Packing Co., Jacksonville.
H. G. Blood and Bone	8.45	3.53	3.09	6.60	...	...	...	...	...	4.58	10	...	Armour Packing Co., Chicago, Ill.
Acid Phosphate	7.85	16.92	7.10	24.02	...	...	...	14.00	...	...	...	...	Little Brothers, Jacksonville
Strawberry Fruiter	7.35	5.98	2.41	8.39	2.43	8.91	10 to 12	5 to 6	2 to 3	...	2 to 3	10 to 12	Florida Fert. Mfg. Co., Gainesville, Fla.
Extra Fruit and Vine	6.10	6.37	2.11	8.50	2.31	13.73	8 to 12	6 to 8	...	...	2 to 3	14 to 16	Southern Fertilizer Co., Orlando, Fla.
Cotton Seed Meal	6.80	...	...	2.88	9.43	1.26	..	...	...	2.80	7.50-8½	1.85	Dothan Cotton Oil Co., Dothan, Ala.
Cotton Seed Meal	7.80	...	...	2.60	8.99	1.28	6.5-8.75	...	...	1½ to 3	7½ to 9	1 to 2	Trader's Cotton Oil Co., Union Springs, Ala
Cotton seed Meal	5.96	...	...	2.92	8.29	1.50	...	...	...	2½-2.80	7½-7.85	1½ to 2.85	Southern Cotton Oil Co, Montgomery, Ala
Cotton Seed Meal	8.35	...	...	2.66	7.93	1.38	8.00	...	...	2.10	7.50	2	Alabama Cotton Oil Co., Montgomery, Ala.
H. G. Acid Phosphate	13.60	17.57	1.30	18.87	...	...	12 to 15	15 to 17	1 to 2	...	...	...	Goulding Fertilizer Co, Pensacola, Fla.
A. L. Wilson *6.60* Acid Phosphat	12.30	14.77	3.76	17.53	...	...	12 to 15	14 to 16	1 to 2	...	...	...	Goulding Fertilizer Co., Pensacola, Fla.
Branley's XXX Phosphate.	8.05	14.38	1.76	16.14	...	...	10 to 20	13 to 15	2 to 3	...	...	...	Bradley Fertilizer Co., Boston. Mass.
Dissolved Bone Phosphate	14.65	13.67	1.51	15.18	...	...	11	13	1.50	...	...	...	Georgia Chemical Works, Augusta, Ga.
Atlas Acid *Phosphate*	12.95	15.49	2.29	17.78	...	...	12 to 15	13 to 15	2 to 3	...	...	...	Goulding Fertilizer Co., Pensacola, Fla.
Acid Phosphate	13.75	12.34	0.28	12.62	...	...	12 to 16	12 to 14	2 to 4	...	...	...	Virginia, Carolina Chem Co, Richmond, Va
Bradley's Palmetto Phosphate	7.95	14.89	1.58	16.[illegible]	...	...	10 to 12	12 to 24	2 to 3	...	...	...	Bradley Fertilizer Co. Boston, Mass.
Cumberland *Bone* Super Phoa.	16.15	10.71	1.62	12.53	2.07	1.71	10 to 20	8 to 10	1 to 2	...	2 to 3	1 to 2	Cumberland Bone Phos. Co., Portland, Md
Goulding's Bone Compound	13.96	9.73	3.98	13.71	2.09	1.51	10 to 12	8¾-10¼	1 to 2	...	2 to 2½	1½ to 2	Goulding Fertilizer Co, Pensacola, Fla
Gem Guano	13.90	10.25	3.18	13.43	1.78	1.84	10 to 12	8 to 10	1 to 2	...	2 to 2½	2 to ½	Goulding Fertilizer Co., Pensacola, Fla.
Lott's Compound	3-45	4.35	8.48	12.83	1.83	12.75	...	5 to 6	...	...	2½ to 2½	12 to 13	H. M. Lott Havana, Fla.
Cumber and Fertilizer	11.80	9.31	2.12	11.46	1.91	2.09	12	8	2	...	2	2	Mutual Fertilizer Co., Savannah, Ga.
Mobile Standard Guano	7.45	9.68	4.74	14.43	2.62	2.62	11 to 16	8 to 10	1½ to 2	...	2 to 3	2 to 3	Mobile Phosphate Co, Mobile, Ala.
Raw Bone Super Phosphate	13.57	10.59	3.30	13.89	2.15	1.73	10 to 15	9 to 10½	1 to 3	...	2 to 3	1½ to 3	Standard Guano & Chem. Co., New Orleans
Goulding's H.G, Acid Phos. & Pot	10.3[illegible]	14.70	1.42	16.13	..	1.30	10 to 15	12 to 14	1 to 2	...	...	1 to 2	Goulding Fertilizer Co., Pensacola, Fla.

BUREAU OF FERTILIZERS—Continued.

Name of Fertilizer	Moisture	Phos. Acid			Ammonia	Potash (K_2O)	Guaranteed Analysis						By Whom and Where Manufactured
		Available	Insoluble	Total			Moisture	Available Phos. Acid	Insoluble Phos. acid	Total Phos Acid	Ammonia	Potash (K_2O)	
Blood, Bone and Potash	9.90	6.86	3.60	10.46	3.78	4.11	9.11	6 to 8	3 to 5	....	4 to 6	4 to 6	Tampa Fertilizer Co., Tampa, Fla.
H. G. Vegetable Fish Guano	10.10	7.71	1.46	9.17	3.73	7.08	10 to 12	5 to 7	2 to 4	....	4 to 6	6 to 8	Tampa Fertilizer Co., Tampa, Fla.
Pineapple Manure	5.20	6.09	3.26	9.35	5.57	10.87	8 to 10	4 to 5	....	....	5 to 6	7 to 8	Tampa Fertilizer Co., Tampa, Fla.
Special Mixture	5.40	8.36	2.10	10.46	7.50	8.18	8 to 10	4 to 6	5 to 5	....	7½	7 to 8	Tampa Fertilizer Co., Tampa, Fla.
Potato Fertilizer	8.50	6. 8	1.80	7.98	3.0	10.21	8 to 10	4 to 6	3 to 4	....	3 to 5	10 to 12	Tampa Fertilizer Co., Tampa, Fla.
Strawberry Fertilizer	7.65	6.76	2.01	8.80	2.65	9.30	8 to 10	6 to 8	0 to 4	....	2½ to 4	8 to 10	Tampa Fertilizer Co., Tampa, Fla.
Orange Fruiter Special	5.60	7.47	1.17	8.64	2.40	16.12	8 to 10	6 to	1 to 2	....	2 to 3	16 to 18	Tampa Fertilizer Co., Tampa, Fla.
Fruit and Vine Fertilizer	10.10	7.55	1.03	8.18	2.59	12.0	8 to 10	6 to	1 to 3	....	2 to 4	12 to 14	Tampa Fertilizer Co., Tampa, Fla.
Ober's Fruit & Vine Fertilizer	9.10	7.80	2.48	10.28	2.95	12.71	12 to 1	6 to	1 to 2	....	2½ to 3½	10 to 12	A. Ober & Sons, Baltimore, Md.
Bradley's Vegetable Fertilizer	6.60	6.59	2.06	8.65	3.93	6.20	10 to 13	6 to	1 to 2	....	to 5	5 to 6	American Agr. Chem. Co., New York.
Baugh's Special Manure for Orange Trees and Nursery Stock	8.7	6.05	2.81	8.86	3.07	10.85	10 to 12	5 to 6	2 to 3	....	2 to 3	10 to 11	Baugh & Sons, Baltimore, Md.
Tobacco Dust ......M..	3.05	......	......	.....	1.59	1.96	....	....	....	....	3 to 4	1 to 3	Tampa Fertilizer Co., Tampa, Fla,
Pure Ground Tobacco Dust	11.2	......	......	......	1.78	4.94	....	....	....	......	2 to 3	4 to 8	Tampa Fertilizer Co., Tampa, Fla.
Dried Blood	10.55	....	......	......	16.41	......	....	....	....	....	16 to 18	....	E. O. Painter Fert. Co., Jacksonville.
Nitrate of Soda	2.[illegible]0		.....	......	18.31	......	....	....	......	....	28 to 19	....	Tampa Fertilizer Co., Tampa, Fla.
H. G. Acid Phosphate	15.15	14.16	0.47	14.68	......	......	10 to 12	14 to 16	2 to 3	....	.....	....	Tampa Fertilizer Co., Tampa, Fla.
Dissolved Bone Black	14.35	17.45	0.21	17.66	....	......	....	18 to 19	....	......	....	....	Tampa Fertilizer Co., Tampa, Fla.
Fine Ground Bone	6.15	10.80	10.08	20.88	5.64	......	....	....	....	22 to 25	4 to 6	....	Stein, Hirsch & Co., Chicago, Ill.
Kainit	4.15	......	......	....	......	12.84	....	....	....	....	......	12.13	Baugh & Sons, Baltimore, Md.
Double Manure Salt	14.20	......	......	......	......	26.56	....	....	....	....	....	25 to 2[illegible]	Tampa Fertilizer Co., Tampa, Fla.

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19		
Sulphate of Ammonia	22 to 24		
Dried Blood	12 to 17		
Concentrated Tankage	12 to 15	1 to 2	
Bone Tankage	6 to 9	10 to 15	
Dried Fish Scrap	8 to 11	6 to 8	
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	14 to 17	1½ to 2	

PHOSPHATE MATERIALS.

	Pounds per Hundred		
	Ammonia	Available Phosphoric Acid	Insoluble Phosphoric Acid
Florida Rock Phosphate			33 to 35
Florida Pebble Phosphate			26 to 32
Florida Superphosphate		14 to 19	1 to 6
Ground Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissolved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES.

	Pounds per Hundred			
	Actual Potash	Ammonia	Phosphoric Acid	Lime
Muriate of Potash	50			
Sulphate of Potash	48 to 52			
Double Sulphate of Potash & Magnesia	26 to 30			
Kainit	12 to 12½			
Sylvinit	16 to 20			
Cotton Seed Hull Ashes	15 to 30		7 to 9	10
Wood Ashes, unleached	2 to 8		1 to 2	30 to 35
Wood Ashes, leached	1 to 2		1 to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4		3½
Cow Manure (fresh)	0.40	0 to .41	0.16	0 31
Horse Manure (fresh)	0.53	0 to .60	0.28	0.21
Sheep Manure (fresh)	0.67	1 00	0 23	0.33
Hog Manure (fresh)	0 60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.26	0 70

Suggestions to Purchasers.

By carefully studying the foregoing analysis of fertilizers, noting their actual content of the necessary fertilizing elements, namely: ammonia, potash (K2 O), available and insoluble phosphoric acid—the only ingredients of any value to the grower—discarding all "Fancy Brands," "Names" or "Trade Marks;" paying no attention to "Equivalents of Bone Phosphate of Lime" or equivalent of "Sulphate or Muriate of Potash" or equivalents of "Nitrate of Soda" or "Sulphate of Ammonia;" basing his calculations solely on the agricultural and commercial values of the good, offered as shown by the percentage of the three elements of fertility required, and comparing the tables and analysis given with the commercial values, the planter, knowing from experience the particular elements his crop or soil demands, can intelligently select the goods required, and approximate closely the commercial value thereof.

The State Law requires that:

Sec. 3. Every bag, barrel, or other package of commercial fertilizers, cotton seed meal, castor pomace, tobacco stems, tobacco dust, or tobacco meal manufactured, sold in, or imported into this State, shall have securely attached or labeled, and plainly stamped thereon the number of net pounds of fertilizer in the package, the name, brand or trade mark under which the fertilizer is sold, the name and address of the manufacturer and the chemical analysis, stating the percentage of ammonia, and the source from which the same is derived, he percentage of potash soluble in water, the percentage of available phosphoric acid and the percentage of insoluble phosphoric acid, the percentage of moisture contained therein, also the maximum percentage of chlorine therein, and all other ingredients from which it is compounded, also the stamp showing the payment of the license fee provided for in this act.

The Sheriffs of the counties of this State are hereby authorized, and it is hereby made their duty to seize and sell at public sale, each and every bag, barrel or package of commercial fertilizer, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal manufactured, imported into or sold in this State, which shall not have securely attached the tag or label and stamp mentioned in this Section; Provided, That should the owner show to the satisfaction of the Sheriff that such tag or label or stamp had been attached and the same had become detached, the Sheriff shall release the same without cost to the owner.

When "Phosphoric Acid" only is given on the tag, or the "equivalent of Bone Phosphate of Lime," it may be taken as insoluble to a large extent. Florida Rock Phosphate contains 26 to 35 per cent. of "phosphoric acid" equivalent to 50¼ to 86 per cent. of "Bone Phosphate of Lime." Its commercial value is $5.20 to $7.00. The same rock converted into "Superphosphate" or "Acid Phosphate" with 14 to 19 per cent. "available" has a commercial value of $12.60 to $17.10, while its agricultural value is proportionately much greater as raw or untreated rock, has but little agricultural value.

The Phosphoric Acid of "Superphosphate," "Acid Phosphate," and "dissolved bone" are identical chemically and agriculturally. Large quantities of "Acid Phosphate" are used and sold as "Dissolved Bone," advantage being taken of a prejudice existing against a name or term, the available phosphoric acid of "Acid Phosphate" is equally valuable as that from "bones," commercially and agriculturally.

On this subject the following quotation from the report of the State Chemist of Georgia, for 1899-1900, serial number 36, is pertinent:

"It should be borne in mind always that State valuations are relative and approximate only, and are only intended to serve as a guide. It is much to be desired that farmers should study the analysis giving the actual percentages of plant food more, and pay no attention whatever to names and brands. They should realize, for instance, that in nine cases out of ten, brands known as "Pure Dissolved Bone" contain not a particle of bone, but are made simply out of phosphate rock. They are every "whit and grain" as good as if they were made from bone, the available phosphoric acid from rock being just as available and identically the same as the available phosphoric acid from bone. The proof that such brands are not made from bone is that they contain no ammonia, and if they were made from bone the percentage of ammonia would be stated, and it would be charged for. This is only one instance of the folly of being influenced by names and brands—many might be given. Remember that a multiplicity of brands is also expensive to the manufacturer, and you have to pay the cost in the long run. Study the markets, select a time for purchasing when general trade in fertilizers is dull, club together with some of your neighbors whose credit is of the best, or, better, who have a little spare cash, and then order from a reliable manufacturer, stipulating, if you have a preference, just what materials the goods shall be made from, and especially the guaranteed percentage of ammonia, phosphoric acid and potash. Let the maker call it anything he pleases. In this way you will be sure to have a first-class goods bought at the lowest market price. But if you are going to wait till the last minute to buy your fertilizers, at the very time when everybody else wants his, and are going to buy on time and pay interest, why then be assured your fertilizers are going to be expensive just as your clothing or any of your household goods would be if bought in the same way."

The following price list of manurial chemicals is quoted by reputable dealers and importers in Jacksonville in lots of one to ten tons. The same figures can be made in Pensacola or Tampa, for spot cash f. o. b. cars:

	Less than 5 tons	5 to 10 tons	10 tons
High Grade Potash 90 to 95 per cent. Sulphate (48 to 50 per cent. K_2O)......	$52 00	$51 00	$50 00
Sulphate Potash, 48 to 55 per cent. Sulphate (25 to 30 per cent. (K_2O)......	32 00	31 00	30 00
Muriate Potash, 80 to 85 per cent. Muriate (42 to 45 per cent. K_2O)	46 00	45 00	44 00

Kainit, 12 to 13 per cent. Actual Potash	15 00	14 50	13 00
Blood and Bone, 6½ per cent Ammonia	26 50	26 00	25 50
Blood and Bone, 7 to 8 per cent. Ammonia	27 50	27 00	26 50
Blood and Bone, 10 per cent. Ammonia	32 00	31 50	31 00
Raw Bone Meal, 2 to 4 per cent Ammonia, 22 to 25 per cent. total Phosphoric Acid	32 00	31 50	31 00
Boneblack, 16 to 18 per cent. available Phosphoric Acid	25 00	24 00	24 00
Acid Phosphate, 14 per cent. Phosphoric Acid	13 00	12 50	12 00
Nitrate Soda, 18 to 19 per cent. Ammonia	54 00	53 50	53 00
Sulphate Ammonia, 24 to 26 per cent. Ammonia	72 00	71 00	70 00
Dried Blood, 17 per cent. Ammonia	47 00	46 50	46 00
Ground Castor Pomace, 6 to 7 per cent. Ammonia	21 00	20 50	20 00
Canada Hard Wood Ashes, 2 to 8 per cent K$_2$O (Potash)	15 00	14 50	14 00
Pulverized Tobacco Stems, 5 to 8 per cent. K$_2$O (Potash)	15 00	14 50	14 00
Tobacco Stems (Baled) 5 to 8 per cent. K$_2$O (Potash)	16 00	15 50	15 00
Tobacco Dust, High Grade, 5 to 8 per cent. K$_2$O (Potash)	21 00	20 50	20 00
Steamed Bone Flour, 3 to 4 per cent. Ammonia, 25 to 28 per cent. Phosphoric Acid	25 00	24 50	24 00
Bright Cotton Seed Meal, 7 to 9 per cent. Ammonia	26 50	26 00	25 00
Dark Cotton Seed Meal, 6 to 8 per cent. Ammonia	22 00	21 50	21 00

"Blood and Bone," "Tankage," "Garbage" and numerous other by products are excellent fertilizers, but depend solely on their "Ammonia," "Phosphoric Acid" and "Potash" for their value, the "odor" or smell has no value. Their analysis is the only safe guide as to their agricultural value.

The phosphoric acid of "Superphosphate," "Acid Phosphate," and "dissolved bone" are identical chemically and agriculturally. Large quantities of "Acid Phosphate" are used and sold as "Dissolved Bone," advantage being taken of a prejudice existing against a name or term, the available phosphoric acid of "Acid Phosphate" is equally valuable as that from "bones," commercially and agriculturally.

COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent. and above in ammonia, 2 per cent. or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its commercial value is as follows:

8 per cent. ammonia @ $3.00	$24 00
2 per cent. available phosphate @ $1.00	2 00
1½ per cent. potash @ $1.10	1 65
	$27 65

The commercial value being in excess of the market value.

There is a quantity of cotton seed meal offered in the State labeled "For feeding purposes only." These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent. potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia	$13 50
1¾ per cent. phosphoric acid	1 75
1½ per cent. potash	1 65
Commercial value	$16 90

These goods are sold at $1.00 to $2.00 per ton less than prime meal. Their relative value is *$10.75 less than prime meal.* There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of amomnia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis, and pay for the actual content of the valuable elements only.

ORGANIC AMMONIATES.

It is generally conceded by pineapple growers that the sulphates of ammonia and potash are harmful to pineapples. The universal practice among the pineapple growers is to use organic fertilizers only—cotton seed meal, castor pomace, blood and bone for ammoniates; ashes, tobacco and nitrate of potash for potash.

Blood and bone supplying ammonia and phosphoric acid, also considerable "Tankage, and "Garbage," reinforced by sulphate of ammonia, has been found in the State an unquestionably valuable fertilizer for certain crops, is generally acknowledged hurtful to pines.

The State law, section 3, requires the manufacturers to state in the "guarantee on each package the percentage of ammonia and the source from which it is derived." A failure to state the source of the ammonia in a fertilizer is a violation of the law.

Purchasers requiring only "oragnic ammonia" in their fertilizers should see that this important part of the guarantee is complied with.

MECHANICAL CONDITION.

A number of complaints have been made to the department this season of failure of vegetable crops, using certain brands of goods. On examination chemically, these goods have been found well within the guarantee of their makers. The same goods (that is, goods having the same amounts of fertilizing elements) have proved satisfactory to growers in the same localities, and under the same conditions. The difference in results can be attributed solely to the imperfect grinding and failure to properly mix the goods complained of. In all cases the best results have been had from those goods having the best mechanical condition.

Other things being equal, those goods most finely pulverized and well mixed have proved most satisfactory. Coarse ground "Blood and Bone," "Tankage" and "Mixed" Fertilizers" using such coarse material in compounding, have proved unsatisfactory in producing quick results, as demanded by the vegetable growers of the State.

That the mechanical condition of commercial fertilizers has much to do with results, has been practically demonstrated, particularly among the vegetable growers of the State.

TOBACCO DUST.

Large quantities of tobacco dust are used in this State, particularly by pineapple growers. It is valuable mostly for its potash, and for its pungent or aromatic properties, as an insecticide. No material offered in the State varies more in its composition and value, nor is anything more apt to be adulterated or "loaded."

Analysis of two samples taken from different parts of the State show 58.43 per cent. and 51.30 per cent. (more than half) to be simply clay or fine sand. The "commercial value" of different samples are shown in the preceding analysis, varies from $23.20 to $10.92 per ton. Purchasers should buy only on guarantee and pay for what they get. Manufacturers and dealers purchase only on guarantee and settle according to analysis.

This particular material varies in value probably more than any other on the market, and requires the utmost care on the part of the dealer and consumer to prevent confusion, disappointment and dissatisfaction.

If purchasers demand the guarantee and refuse to purchase goods shown by the guarantee to be worth less than the price demanded, this condition will soon cease.

ASHES, HARD WOOD, PALMETTO CANADA ASHES.

There are many tons of ashes used as a fertilizer in this State. When they can be purchased at a price comparable with their actual value they are doubtless a most valuable source of potash. The average price of these goods is, however, far in excess of their value. Potash obtained from this source generally costs much more than from other reliable sources—Sulphate, or Muriate of Potash, Kainit or Sylvilite. Samples of Hickory, Maple, Palmetto and other so-called Hardwood Ashes, examined this season, show from 0.57 to 4.24 per cent. of Potash, worth from $0.62 to $4.66 per ton at seaports. The average of four samples shows 2.56 per cent. of Potash. Guarantees are generally 2 to 8 per cent. Potash. The minimum is the actual guarantee. The best unleached ashes contain but 8 per cent.; ordinarily less than 5 per cent.

UNITED STATES DEPARTMENT OF AGRICULTURE.

Climate and Crop Service of the Weather Bureau—Florida Section.

A. J. MITCHELL, SECTION DIRECTOR, JACKSONVILLE, FLA.

Climatological Data for May, 1902.

Stations	Counties	Elevation, feet	Length of record years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days	
NORTHERN SECTION.																		
Archer	Alachua	92	18	77.7	+2.7	95	4*	60	1*	34	3.51	—0.27	0.84	9	14	17	0	se
Bainbridge	Decatur, Ga	119	10	77.4	+3.0	95	26	57	29	33	3.18	—0 22	1 60	6	..	..	..	......
Federal Point	St. Jchns	10	9	....	.	..	...	..	...	.	....	......		..	.....	..	.	.....
Fernandina	Nassau	15	1	76.4	+3.2	92	4	63	1*	23	2.32	—0.51	2 10	6	......	....	...	......
Fort George†	Duval		17	76.3	+1 7	88	20*	69	9		....	......	..	.	.	...	.	se
Gainesville	Alachua	175	10	79 2	+3 6	99	21	63	24	33	1.14	—1 84	0.81	5	20	4	7	......
Huntington	Putnam	50	6	77 5	+2.0	98	26	59	2*	33	0.75	—2 43	0 19	6	19	11	1	se
Jacksonville	Duval	43	30	77 8	+3 0	93	26	64	1	24	1.82	—1 86	1 26	8	16	14	1	se
Jasper	Hamilton	165	5	76.2	+0.7	95	21*	60	24*	30	2.27	—0 92	1 27	3	....	..	..	......
Lake Butler	Bradford		5	75.6	—0.3	95	21*	51	7*	39	1.51	—0 85	1 01	6	3	25	3	......
Lake City	Columbia	201	13	78.1	+1.9	97	26	59	24	33	1.79	—1 05	1 45	3	7	21	3	se
Macclenny	Baker	140	7	77.8	+2.0	101	26	56	24	38	1.50	—1 22	0 55	7	25	6	0	e
Micanopy	Alachua	105	7	77 7	+1.4	96	21*	59	23*	34	4 25	+0 31	1 90	7	15	15	1	......
Pinemount	Suwannee	...	...	77.4	.....	98	26	59	1*	36	3 31	......	1 11	8	8	23	0	sw
Rideout§	Clay	...	2	76.0	.....	97	26	55	2	37	2 17	......	0 53	7	13	17	1	e

Climatological Data for May—(Continued.)

Stations	Counties	Elevation, feet	Length of record, years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days.	
Savannah, Ga.	Chatham, Ga.	36	31	76.6	+3.0	96	4	63	30	26	2.51	-0.25	0.81	10	1[illegible]	[illegible]1	2	sw
St. Augustine...x	St. Johns	10	52	77.2	+3.4	91	26*	66	2*	20	0.49	-2.96	0.21	3	6	20	5	se
Sumner	Levy	......	12	76.1	+2.7	95	30	54	23	35	2.63	+0.83	1.22	5	12	19	0	sw
Switzerland	St. Johns	...	5	76.4	+0.7	98	26	58	7*	[illegible]	1.32	-1.38	0.48	6	.....	.	......	......
Thomasville, Ga.	Thomas, Ga.	330	24	78.4	+4.3	101	21	62	23*	31	1.20	-2.72	0.48	5	...	...	..	......
Waycross, Ga.	Ware, Ga.	131	20	a77.2	+2.4	a93	3*	a61	7*	31	6.65	+3.90	2.90	7	..	...	.....	......
	Means	....	...	77.1	-2.0	...	..	..	...	...	2.05	-1.09	...	6	13	16	2	se
CENTRAL SECTION.																		
Bartow	Polk	122	7	79.0	+2.8	93	19*	60	17*	33	2.18	-0.39	2.18	1	15	16	0	sw
Brooksville ¶	Hernando	328	10	79.0	+2.5	95	20*	63	23	29	2.54	-0.44	0.78	8	16	13	2	ne
Clermont	Lake	110	10	80.1	+2.2	96	27	64	1	26	1.00	-2.06	0.38	6	12	19	0	e
DeLand	Volusia	32	2	78.6	..	97	26	62	2	29	.. ..	......	....	.	....	...	..	......
Eustis	Lake	180	12	79.6	+2.5	95	4*	63	2*	29	3.55	+0.75	2.24	7	7	23	1	e
Ft. Meade	Polk	125	16	78.4	+3.1	98	28	59	1	35	3.70	-0.22	3.15	3	25	6	0	e
Fort Pierce	Brevard	....	11	76.2	-0.8	95	27*	60	3*	30	0.62	-3.68	0.25	5	20	7	4	se
Inverness	Citrus	43	2	78.1	. ..	94	20	62	23	2[illegible]	5.58	......	1.50	11	9	20	2	se
Kissimmee	Osceola	65	10	a79.6	+1.6	a99	28	60	12*	a32	0.34	-2.64	0.23	2	. .	...	....	......
Malabar	Brevard	......	.	77.4	.....	95	26*	61	3*	32	2.88	..	2.38	2	25	5	1	se
Merritt's Island	Brevard	20	21	78.4	+2.1	92	26	68	4*	18	1.83	-1.74	1.81	2	21	10	0	se
New Smryna	Volusia	20	14	75.2	+0.4	97	26	56	14	33	0.85	-1.82	0.75	2	25	6	0	e
Ocala	Marion	150	16	78.2	+3.5	96	20*	60	23*	33	2.32	-0.59	0.95	8	16	14	1	ne
Orange City	Volusia	50	12	77.2	+0.5	97	26	56	2*	36	1.15	-1.68	0.69	4	13	18	0	ne
Orlando	Orange	98	12	78.2	+2.0	93	26*	60	3	30	1.52	-1.64	1.10	6	18	13	0	e

Plant City	Hillsborough	121	10	76 8	+0.6	94	28*	57	2	34	1.37	—2 64	0.68	7	23	8	0	e
Rockwell	Marion	....	[illegible]	79 3	....	99	5	62	5*	37	4 65	......	2 25	6	16	1	14	nw
St. Leo	Pasco	....	7	79 4	+1 1	96	18*	61	[illegible]	32	1 93	—1 32	0 67	6	17	13	1	e
Tampa	Hillsborough	20	12	78 1	+3 0	92	20	64	23	28	4 11	+1 68	3 12	7	7	17	7	ne
Tarpon Springs	Hillsborough	20	18	77 7	+2 6	94	30	63	2	25	1 11	—1 90	0 84	5	20	9	2	s
Titusville	Brevard	11	8	76 8	+2 3	97	26	58	14	33	0 27	—4 03	0 17	3	7	15	9	se
	Means	...	..	78 1	+1 8	...	...	...	...	...	2 16	—1 49	....	5	17	12	2	e
SOUTHERN SECTION.																		
Avon Park	DeSoto	....	..	78.6	. . .	97	28	60	1	31	3.71	......	3.12	9	14	16	1	e
Flamingo	Monroe	....	2	78 9	. . .	94	25	65	3	26	3 05		2 05	3	28	0	3	se
Havana	Cuba	57	11	77 5	—1 0	89	19	67	5	17	0 85	—3.62	0 79	2	19	11	1	e
Hypoluxo	Dade	....	5	76 3	—0 3	95	27	63	4	2[illegible]	3 98	— 2 81	2 25	8	22	7	2	e
Jupiter	Dade	28	14	77 8	+2 0	92	27	66	4	23	4 83	—0 43	2 27	7	10	20	1	se
Key West	Monroe	22	31	80 0	+1 0	87	30	72	13	12	0 28	—2 88	0 12	4	16	13	2	e
Manatee	Manatee	16	19	77 6	+1 6	95	30	60	29*	35	1 06	— 2 22	0 54	5	10	21	0	nw
Marco	Lee	....	2	78 8	...	94	30	63	14	23	4 79	......	1 60	9	27	4	0	se
Miami	Dade	....	[illegible]	b80 2	+2 9	92	28	a67	16*	c 24	0 94	—5 18	0 30	5	18	7	6	e
Myers	Lee	....	19	78 4	+0 4	93	20*	62	3	27	1 [illegible]3	—2 13	0 5	6	24	7	0	se
Nassau	N. P. Bahamas	....	.....	77 5	.....	[illegible]8	26*	70	4*	18	0 63	......	0 32	3	...	...	.....	......
Nocatee	DeSoto	3	3	79 2	.....	97	29	59	4	35	0 57	....	0 12	8	12	0	19	......
San Juan	Puerto Rico	82	27	78 1	—1 0	89	28	68	16	17	13 97	+9 09	....	22		11	17	e
	Means	..	....	78 6	+. 3	...	..	...	..	....	2 44	—2 61	....	6	18	10	3	se-e
WESTERN SECTION.																		
Bonifay	Holmes	116	1	a77 0	.....	a96	21*	a57	29	a 32	0 22	......	0 08	7	...	....	....	s
Carrabelle	Franklin	12	4	b77 9	+1 9	a97	26	b62	29	b 28	2 10	+0 80	1 25	5	....	..	.	s
Daphne	Baldwin, Ala.	......	...	a76 3	+2 1	a94	21*	a58	29	a 31	5 53	+3 10	3 50	5	17	5	9	sw
DeFuniak Springs	Walton	193	6	76 8	+2 [illegible]	98	21	57	29	33	2 46	—0 66	0 90	12	12	18	1	......
Holt	Santa Rosa	208	.....	c77 4	....	c97	21	c57	7	c 38	2 15	......	2 07	3	. ..	....	....	......
Marianna	Jackson	85	2	76 2	....	95	21	58	28	29	4 99	.....	1 40	11	16	13	2	w
Mobile	Mobile, Ala.	35	3[illegible]	76 9	+3 0	95	21	[illegible]0	9	25	3 00	—1 09	0 93	8	16	9	6	s
Molino	Escambia	...	.....	78 0	....	98	22	69	10*	32	3 60	.....	1 90	5	16	12	3	s
Montgomery	Montgom'y, Ala	219	29	77 0	+4 0	95	21	57	28	26	5 62	+1 87	2 69	9	16	9	6	se

Climatological Data for May, 1902—Continued.

Stations	Counties	Elevation, feet	Length of record, years	Temperature, in degrees Fahrenheit							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number rainy days	Number clear days	Number partly cloudy days	Number cloudy days	
Pensacola..........	Escambia......	56	22	72.2	+3.0	93	21	65	29	23	1.75	—1 19	0.62	11	15	12	4	se
Quincy....	Gadsden.......	260	2	78 6	.....	98	22	54	29	35	2 08	....	0 95	7	14	17	0	e
St. Andrews Bay...	Washington....	...	4	76 7	+1 3	97	21	59	1*	33	7 81	+4 86	1 78	11	23	8	0	s
Stephensville¶......	Taylor............	...	3	.....	.. .	95	5	...	..	....	2 35	+1 21	1 75	4	10	19	2	sw
Tallahassee....	Leon...........	193	16	76 7	+2 2	93	21	61	4*	26	2 86	—0 62	0 75	9	21	10	0	s
Waukeenah	Jefferson.......	....	...	78 2	....	99	22	61	4*	34	2 90	....	0 90	4	25	4	2	s
Wausau.........	Washington ..	250	4	77 3	+1 1	99	21	51	29	41	3 72	—0 30	1 79	8	12	17	2	......
Wewahitchka......	Calhoun.... ...	....	3	77 0	+0 4	99	21	59	28	34	4 62	.....	1 42	8	11	11	9	s
	Means...... .	....	...	77 3	+1 8	...	..	.	...	....	3 34	+0 59	......	8	16	13	2	s
	State Means	......	....	77 6	+2 1	...	....	...	...	....	2 45	—0 46	...	6	16	13	2	se
APRIL, 1902.																		
San Juan......P. R	....	...	27	77 3	—0 0	92	19	68	28	19	6 09	+2 35	2 10	12	9	13	8	e
Daphne, Ala.........	....	....	..	*64 8	+2 8	a84	30	a39	1	a 32	1 15	—2 06	0 90	3	18	9	3	s w

†Thermometers are not self-registering and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily.

*More than one day. ‡Weather Bureau.

¶Not included in means. §Instruments moved from Middleburg four miles northwest to Rideout on the 1st inst.

All records, except stations outside of the State, are used in determining State or district means, but State and district departures are determined by comparison of current data of only such stations as have normals.

a, b, c, etc., following name of station, indicate number of days missing from report.

Salient Climatic Features.

ATMOSPHERIC PRESSURE.

The mean pressure for the month was 30.01 inches, which is 0.04 inch above normal. The highest observed pressure was 30.19 inches, at Jacksonville on the 31st; the lowest observed pressure was 29.77 inches, at Jacksonville on the 27th; monthly range for the State was 0.42 inch.

TEMPERATURE—(Degrees Fahrenheit).

The monthly mean temperature for the State was 77.7 degreees, 2.1 degrees above normal. By sections, the means were: Northern, 77.1 degrees; Central, 78.1 degrees; Southern, 78.6 degrees; Western, 77.3 degrees. The highest monthly mean temperature was 80.2 degrees, at Miami; the lowest monthly mean temperature was 75.2 degrees, at New Smyrna. The highest temperature during the month was 101 degrees, at Macclenny on the 26th; the lowest temperature was 51 degrees, at Lake Butler on the 7th and other dates, and at Wausau on the 29th; absolute range for the State was 50 degrees.

PRECIPITATION—(Inches and hundredths).

The average precipitation for the State during the month was 2.45 inches, 0.46 inch below the normal amount. By sections, the averages were: Northern, 2.05 inches; Central, 2.16 inches; Southern, 2.44 inches; Western, 3.34 inches. The greatest monthly amount was 7.81 inches, at St. Andrews' Bay; and the least was 0.27 inch, at Titusville. The greatest amount for any twenty-four hours was 3.15 inches, at Fort Meade on the 30th.

WIND AND WEATHER.

The prevailing winds during the month were from the southeast. By sections, there were: Northern, 13 clear days; 16 partly cloudy; 2 cloudy. Central, 17 clear; 12 partly cloudy; 2 cloudy. Southern, 18 clear; 10 partly cloudy; 3 cloudy. Western, 16 clear; 13 partly cloudy; 2 cloudy.

Rainy days: Northern section, 6; Central, 5; Southern, 6; Western, 8.

MISCELLANEOUS PHENOMENA—(Dates of).

Fog.—Jacksonville, 5; Marianna, 20; Wewahitchka, 6, 19.
Hail.—Sumner, 3; Ocala, 3; Myers, 2, 30.

Halos, Solar.—Rideout, 8, 9, 13, 19; Fort Meade, 13, 16, 18.

Halos, Lunar.—Lacksonville, 12, 14; Rideout, 12, 14; Fort Meade, 14.

Thunderstorms.—Jacksonville, 2, 7, 9, 15, 17, 18, 19, 21, 31; Archer, 9, 16; Gainesville, 9, 15, 16, 21, 26, 30, 31; Lake Butler, 15, 16; Rideout, 1, 18, 19, 20, 30, 31; Sumner, 1, 4, 5, 20, 21, 26, 27, 28, 30; Clermont, 2, 15, 29, 30, 31; Eustis, 3, 16, 26, 30; Fort Meade, 2, 16, 19, 29, 30; Fort Pearce, 9, 10, 27, 28, 29, 30, 31; Malabar, 9, 30; Merritt's Island, 19, 26, 27, 28, 29, 30; Ocala, 3, 26; Orlando, 20, 26, 31; St. Leo, 2, 3, 4, 14, 15, 18, 19, 20, 30; Tarpon Springs, 20, 21, 30; Titusville, 27, 30; Avon Park, 30, 31; Hypoluxo, 27, 31; Manatee, 2, 3, 4, 12, 13, 15, 16, 20, 21, 29, 30, 31; Myers, 1, 2, 9, 10, 11, 13, 14, 15, 17, 18, 19, 22, 29, 30; Carrabelle, 10, 31; Marianna, 26; Molino, 14, 22, 25, 26; Waukeenah, 4, 5, 8, 14, 17, 21; Wewahitchka, 1, 2, 3, 13, 26, 31.

COMPARATIVE TEMPERATURE AND RAINFALL DATA FOR MAY, WITH DEPARTURES FROM NORMAL, DURING THE PAST ELEVEN YEARS.

The normal temperature for May is 75.6 deg., the normal rainfall is 2.91 inches

Year	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902
Mean ...	75.3	76.3	74.6	75.9	74.7	74.0	76.4	78.2	75.5	75.1	77.7
Departure	—0.3	+0.7	—1.0	+0.3	—0.9	—1.6	+0.8	+2.6	—0.1	—0.5	+2.1
Total. ..	2.19	3.92	1.51	4.46	2.73	2.25	1.60	1.22	3.83	4.38	2.45
Departure	-0.72	+1.01	—0.40	+1.55	—0.13	—0.66	—1.31	-1.69	+0.92	+1.47	—0.46

PRESSURE AND WIND TABLE

Stations	Atmospheric Pressure					Wind Velocity in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville............	30.02	30.19	31	29.77	27	5.353	27	n	9	95	45	73
Jupiter.	30.02	30.15	1	29.80	27	8.656	48	nw	27	95	54	74
Key West..............	29.99	30.12	1	29.88	18†	6,384	26	ne	31	86	58	71
Pensacola	*30.04	30.17	1	29.87	18	6.996	34	e	21	98	42	74
Tampa..	30.01	30.17	1	29.81	27	4,844	42	se	30	95	51	75

*8 a. m. readings only. †And succeeding date.

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FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

JULY 1, 1903.

B. E. McLIN,
COMMISSIONER OF AGRICULTURE.
TALLAHASSEE, FLORIDA.

Part 1.—Crops. Part 2.—Fertilizers.
Part 3.—Miscellaneous.

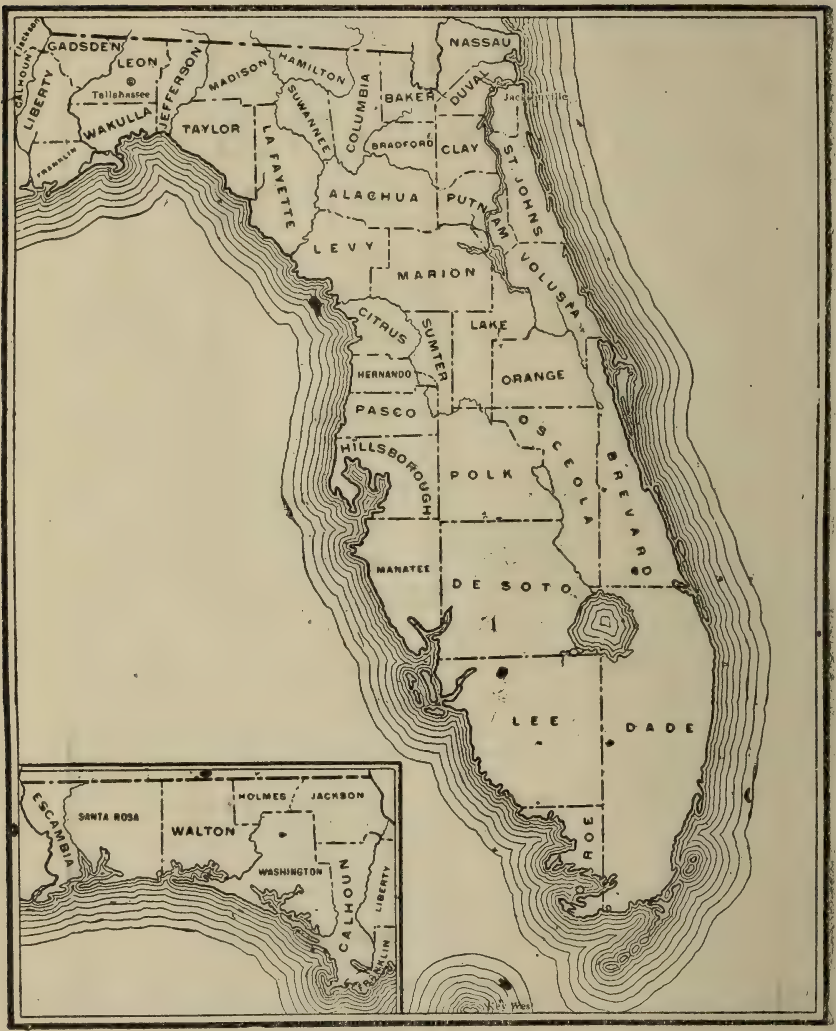
Entered January 31, 1903, at Tallahassee, Florida, as second-class matter, under Act of Congress, of June 6, 1900.

These Bulletins are Issued free to those requesting them.

TALLAHASSEE, FLA.,
I. B. HILSON, STATE PRINTER.

County Map of the State of Florida.

(For the Bulletin.)



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PART I

CROPS.

DEPARTMENT OF AGRICULTURE.

Hon. B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

ALACHUA COUNTY—We are now having plenty of rain and crops are improving; continued favorable seasons will bring good crops all around.

BAKER COUNTY—Crops were nearly all considerably damaged by excessive rain in May and first part of June; we are now having fine weather for killing grass; some cotton had to be thinned away, but the weather now is helping the cotton, and it is green and growing nicely.

BRADFORD COUNTY—Crops are doing well since the seasons have gotten favorable and some of them will yield well, some above an average; pears, peaches and melons very good. Crops generally are in very fair condition, having improved much under the favorable change in the seasons.

CITRUS COUNTY—Crops are mostly very good, some above the usual standard. Orange trees doing well, also pears, and both will give a very good yield.

CLAY COUNTY—We have had fine seasons so far and all crops are far ahead of last year.

COLUMBIA COUNTY—Recently the crops have sustaintd some damage from heavy rains and hail storms, but the general favorable seasons will cause most crops to yield well.

DADE COUNTY—We are having plenty of moisture and sunshine, and in consequence, growing crops are fine, and fruits are in excellent condition, with splendid prospects for large crops.

DESOTO COUNTY—We had considerable dry weather in the Spring, but local rain prevented a drought; so all crops are doing well, also fruit trees; indications are for good crops; there is considerable June blossom on orange and grapefruit trees; prospects are as a whole good.

Escambia County—We are having good seasons now and everything looks promising; the fruit crop is very poor exceut Tomatoes, and they are the finest for years; watermelons ond canteloupes are also a good average.

Franklin County—We are having splendid showers, and crops are growing fine; "Moore's early grapes" are ripe, and concords are turning

Gadsden County—Seasons are good now and crops are fast improving in appearance and prospective yield where they have been cultivated.

Hamilton County—The seasons have been favorable of late and crops will make a fair average yield

Hillsborough County—Crops generally doing well since the very heavy rains have stopped, and all now bid fair to yield more than average crops; fruit crops are looking exceptionally fine.

Holmes County—The cotton crop showes the poorest stand ever known; some have planted two and three times, and have no stand yet; replanting with peas; corn is small but will come out if seasons become favorable soon.

Jackson County—The general average condition of crops throughout the county is good, and prospects will also average very well; fruit crops are fair.

LaFayette County—Condition of crops is generally fair, and will improve more as the favorable seasons progress; some of the field crops are now very good.

Lake County—The watermelon crop suffered considerably from dry weather, four or five weeks ago, and never fully recovered; tomatoes suffered from blight to some extent; Orange, grapefruit and lemon trees are looking and doing well.

Lee County—All field crops are doing well, and citrus and other fruit crops are also in excellent condition; the favorable seasons make good fruit crops certain.

Leon County—Condition of cotton has improved, also other crops, and the presumption yield is for a good average all around.

Liberty County—Crops are all very late, on account of cold dry spring; we are having good rains now and the crops are improving.

MADISON COUNTY—Corn where properly worked is good, but needing rain badly just now; cotton, both upland, and seaisland are of poor stand and very small, and at least three weeks late.

NASSAU COUNTY—Crops planted on highland are doing well, but on lowlands the heavy rains drowned them out entirely even killing peach trees, where they had to stand in the water for some time.

OSCEOLA COUNTY—The weather is very favorable for all cropes except sweet potatoes, it being rather dry for transplanting; peach crop marketed, pears coming in, and is the largest crop Leconte pears ever seen here, Keiffers a failure.

PASCO COUNTY—June has been very dry and crops have suffered some; we are now having some fine showers, and hope to make a good hay crop as well as other field crops.

POLK COUNTY—Crops are in finer condition here at present than they have ever been seen before, and the prospect for good crops have never been surpassed.

PUTNAM COUNTY—The heavy rains in May injured some crops, while the drought in June did the same thing, but the seacsons rae now more favorable and prospects brighter.

ST. JOHNS COUNTY—Crops are doing well and prospects are better than for a number of years.

SANTA ROSA COUNTY—Crops of all kinds are in fair average condition, and the prospects at this time very good fruit crops are not very good except in a few localities.

SUMTER COUNTY—Crops of all kinds are now in fine average condition; fruit crops are also looking well, and the prospects is for good yield of all crops.

SUWANNEE COUNTY—Corn is small but has a good color, and the crop is doing well; the seasons are very favorable for all crops, and the prospects exceedingly good; and our people are looking forward to a good harvest.

TAYLOR COUNTY—All the crops are in good condition and doing well; and if nothing happens crops will turn out well.

WAKULLA COUNTY—Crop have all improved very much, and if the favorable seasons continue crops will be much better than at any time expected; the fruit crops are turning out very good and prospects generally are very fair.

Waltou County—On account of dry weather in April cotton planting was late, it is in fair condition; blight has almost killed the pear trees; crops are in fine condition though late.

Washington County—We are now having fine growing weather, and all crops are improving rapidly; and prospects are good for an average crop, especially corn, hay cassava; field peas velvet beans, sugar cane and sweet potatoes; cotton late and small but improving.

* *

CONDITION AND PROSPECTIVE YIELD OF CROPS AND FRUIT TREES FOR JUNE, 1903, AS COMPARED WITH AN AVERAGE.

COUNTIES	Upland Cotton	Sea Island Cotton	Corn	Sugar Cane	Rice	Sweet Potatoes	Field Peas	Cassava	Broom Corn	Egg Plant	Peanuts	Hay
	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition
Alachua...	....	75	80	60	60	70	70	....	....	90	90	60
Baker.....	....	75	60	90	75	100	75	....	....	....	75	....
Bradford..	....	70	80	75	90	90	100	....	....	....	85	100
Brevard...	....	....	100	100	....	100	100	....			....	....
Calhoun...	90	....	90	95	80	90	50	....	....	....	80	....
Citrus.....	....	....	110	80	..	100	95	....	....	..	105	100
Clay......	....	110	110	100	100	110	100	100	....	....	100	....
Columbia..	...	90	90	80	80	90	100	....	....	....	100	....
Dade......	....	....	....	....	....	100	100	....	....	....	....	....
DeSoto....	....	....	100	100	95	100	110	110	....	100	100	100
Escambia..	100	...	100	100	100	125	100	100	100	100	150	100
Franklin...	....	...	90	90	...	90	90	..	....	....	90	....
Gadsden...	70	80	90	85	100	100	100	100	....	....	120	100
Hamilton..	...	60	60	75	50	60	60	....	....	....	60	75
Hernando..	....	....	110	85	...	100	100	....	....	....	100	105
Hillsboro	....	110	120	140	100	100	100	100	....	100	....	110
Holmes....	50	....	60	110	90	100	95	....	....	....	100	....
Jackson...	90	90	110	100	100	110	100	....	....	....	100	100
Lafayette..	....	90	85	100	100	100	...	....	....	....	100	....
Lake......	....	....	80	90	50	100	75	75	....	....	50	100
Lee........	...	....	90	100	100	110	100	....	90	100	100	110
Leon......	90	....	100	90	85	75	80	75	....	....	100	100
Levy......	..	...	100	85	...	100	100	..	....	....	100	80
Liberty....	60	....	80	75	75	80	80	....	....	....	60	....
Madison...	70	75	80	110	100	90	75	....	....	...	115	100
Manatee ..	...	....	100	105	....	100	100	.	....	...	..	....
Marion....	90	85	100	110	....	100	100	100	100	100	100	100
Nassau....	...	....	100	75	...	100	....	....	....	....	100	100
Orange....	....	....	90	90	....	85	90	100	....	....	....	....
Osceola...	....	....	...	90	100	100	75	110	120	....	100	110
Pasco.....	....	....	100	100	50	50	80	100	....	100	...	....
Polk......	....	....	115	100	90	115	115	100	....	90	100	100
Putnam...	...	60	60	85	....	75	75	80	....	....	80	....
St. Johns.	....	....	125	100	..	90	90	90	....	....	....	....
Santa Rosa	90	....	90	95	80	85	75	60	75	75	90	75
Sumter.. .	100	100	100	100	100	100	100	100	100	100	100	100
Suwannee.	....	90	90	80	80	90	100	60	50	100	100	100
Taylor....	....	90	80	100	....	100	100	...	....	....	100	....
Wakulla...	65	65	60	100	....	100	100	....	....	....	100	40
Walton....	50	....	65	75	...	70	75	....	....	....	80	....
Washington	60	60	85	100	75	100	100	95	....	...	90	100
Gen'l av'ge.	77	82	91	91	85	91	91	88	91	96	101	94

CONDITION OF CROPS.—Continued.

Counties.	Velvet Beans	Guaves		Bananas		Orange Trees		Lemon Trees		Lime Trees	
	Condition	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua...	90	....	....	....	....	80	30	....	....	....	....
Baker.....	90	....	....	....	....	....	....	....	....	....	....
Bradford..	90	....	....	....	....	70	....	....	....	....	....
Brevard...	......	100	100	100	100	100	125	100	100	100	80
Calhoun...	80	....	....	....	....	90	....	....	....	....	....
Citrus....	100	....	....	....	....	100	100	....	....	....	....
Clay......	100	....	....	....	....	100	....	....	....	....	....
Columbia..	100	....	....	....	....	....	....	....	....	....	....
Dade.....	......	100	100	100	100	100	105	90	100	100	100
DeSoto....	105	100	110	100	120	100	110	100	120	100	110
Escambia.	150	....	....	....	....	....	....	....	....	....	....
Franklin..	......	....	....	....	....	....	....	....	....	....	....
Gadsden..	100	....	....	....	....	....	....	....	....	....	....
Hamilton.	75	....	....	....	....	....	....	....	....	....	....
Hernando.	110	....	....	....	....	100	100	....	....	....	....
Hillsboro	100	..	...	80	20	110	200	110	80	110	80
Holmes....	95	....	....	....	....	....	....	....	....	....	....
Jackson...	90	....	....	....	....	....	....	....	....	....	....
Lafayette.	115	....	....	....	....	....	....	....	....	....	....
Lake......	100	100	100	..	...	100	25	100	25	....	....
Lee.......	100	100	100	100	100	120	100	120	100	100	100
Leon.......	100	....	....	....	....	....	....	....	....	....	....
Levy......	85	....	....	....	....	....	....	....	....	....	....
Liberty....	......	....	....	....	....	....	....	....	....	....	....
Madison...	100	....	....	....	....	....	....	....	....	....	....
Manatee...	100	100	100	100	90	100	100	100	90	100	80
Marion....	110	....	....	....	....	100	.	100	....	....	....
Nassau....	100	....	....	....	....	100	..	100	....	....	....
Orange....	110	....	....	....	....	100	100	100	...	100	....
Osceola...	140	100	80	80	100	130	120	130	100	130	100
Pasco.....	100	....	....	....	....	100	150	....	....	....	....
Polk......	100	....	....	....	....	100	125	....	....	....	....
Putnam...	70	....	....	....	....	100	20	....	....	....	....
St. Johns.	......	....	....	....	....	125	125	....	....	....	....
Santa Rosa	80	....	....	....	....	....	....	....	....	....	....
Sumter....	100	....	....	....	....	100	120	....	....	....	....
Suwannee.	90	....	....	....	....	....	....	....	....	....	....
Taylor....	......	....	....	....	....	....	....	....	....	....	....
Wakulla...	50	....	....	....	....	....	....	....	....	....	....
Walton....	75	....	....	....	....	....	....	....	....	....	....
Washington	100	....	....	....	....	....	....	....	....	....	....
Gen'l av'ge	97	100	99	99	90	101	103	66	89	105	93

CONDITION OF CROPS—Continued.

COUNTIES	Grape Fruit Trees		Tobacco		Tomatoes		Pears		Peaches	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	....	....	50	50	80	70	90	80	80	60
Baker	....	....	....	....	..	....	....	....	50	50
Bradford	...	....	...	....		...	100	200	90	90
Brevard	100	110	....	..	..	...	....	....	...	....
Calhoun			....	...	90	90	100	100	50	50
Citrus	100	100	....	..	100	85	110	115	50	25
Clay	....		....	....		...	110	125	100	100
Columbia		....	....	....	....	....	....	....	75	50
Dade	100	100	...	...	....	....	....	....	....	....
DeSoto	110	100	100	100	100	120	100	120	100	100
Escambia	...	....	100	100	150	150	....	..	75	75
Franklin	...	....	....	.	90	80	60	50	90	90
Gadsden	....	....	150	125	....	....	....	....	....	....
Hamilton	....	....	....	....	....	....	50	50	50	50
Hernando	100	100	...	....	85	85	...	....	60	35
Hillsborough	110	110	....	....	90	100	100	110	100	90
Holmes	....	....	100	110	100	100	10	10	60	50
Jackson	....	....	....	....	....	....	75	75	100	100
Lafayette	....	....	....	....	....	....	....	....	....	....
Lake	100	25	...	....	100	100	100	50	80	75
Lee	110	110	100	100	100	110	110	100	120	110
Leon	....	....	....	...	100	100	60	85	25	65
Levy	....	....	....	....	80	90	....	....	80	50
Liberty	....	....	....	....	....	....	....	....	....	....
Madison	....	....	....	....	100	100	....	....	50	50
Manatee	100	100	...	....	100	100	....	....	....	....
Marion	100	....	80	85	100	110	....	....	75	60
Nassau	....	....	....	....	...	....	50	50	75	25
Orange	100	100	....	....	100	100	....	....	90	50
Osceola	130	120	110	..	120	110	110	90	100	60
Pasco	100	100	100	100	50	50	150	150	80	80
Polk	100	125	....	....	125	100	100	150	100	100
Putnam	....	....	....	....	80	80	60	60	90	90
St. Johns	125	125	....	....	....	....	125	125	90	90
Santa Rosa	....	....	80	80	90	100	50	50	75	75
Sumter	100	120	...	....	100	110	100	125	90	90
Suwannee	....	....	....	....	....	...	....	....	80	80
Taylor	....	....	....	....	....	....	....	....	....	....
Wakulla	....	....	....	....	....	....	80	80	75	75
Walton	....	....	....	....	....	....	....	....	....	....
Washington	....	....	....	....	....	....	....	....	85	85
General Average	105	104	97	96	97	97	87	93	78	70

CONDITION OF CROPS.—Continued.

COUNTIES	Watermelons		Canteloupes		Pine Apples		Grapes	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	90	95	90	90	....	....	....	....
Baker	50	50	....	....	....	...	75	75
Bradford	75	75	..	....	....	...	80	75
Brevard	100	100	....	....	100	120	....	....
Calhoun	95	95	75	75	....	....	75	75
Citrus	75	80	....	....	....	....	....	....
Clay	100	100	....	....	....	....	100	100
Columbia	100	100	100	100	....	....	90	90
Dade	100	100	....	....	110	120	....	..
DeSoto	95	100	90	110	100	120	100	100
Escambia	100	100	100	75	....	....	....	....
Franklin	90	95	90	90	....	....	100	100
Gadsden	100	100	100	100	....	....	100	100
Hamilton	75	75	....	....	....	....	75	100
Hernando	80	80	....	....	....	....	....	....
Hillsborough	50	50	100	80	110	110	100	80
Holmes	100	100	....	....	....	....	100	100
Jackson	110	100	....	....	....	....	100	100
Lafayette	100	100	...	....	....	....	100	100
Lake	100	85	50	50	....	....	100	100
Lee	110	100	....	....	110	110	100	100
Leon	90	95	80	80	....	....	95	100
Levy	100	100	90	90	....	....	....	....
Liberty	100	100	....	....	....	....	100	100
Madison	110	110	100	100	....	....	....	....
Manatee	100	100	100	100	....	....	....	....
Marion	100	100	100	100	....	....	....	....
Nassau	125	100	50	50	....	....	100	110
Orange	100	100	100	100	110	100	....	....
Osceola	100	100	100	100	110	90	....	....
Pasco	80	80	....	....	....	....	....	....
Polk	150	150	75	75	100	100	100	100
Putnam	85	85	....	....	....	....	70	70
St. Johns	90	90	....	...	...	....	90	90
Santa Rosa	60	60	40	40	....	....	90	90
Sumter	90	90	90	90	....	....	90	90
Suwannee	100	100	90	90	....	....	90	90
Taylor	100	100	....	....	....	....	....	....
Wakulla	100	100	....	....	....	....	70	70
Walton	100	100	....	....	....	....	....	....
Washington	75	75	75	75	....	....	....	....
General Average	94	93	86	85	106	109	92	92

PART II

FERTILIZERS.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

VALUATIONS.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1902–1903.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen).	15 cents a pound
Potash (as actual potash, K2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $2·00 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid,	6.39x1.00	$ 6 39
Insoluble Phosphoric Acid,	1.15x ·20	.23
Ammonia	4.93x3.00	14.79
Potash	7.11x1.10	7.82
Mixing and bagging		2.00
		$31.23

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added·

If purchased in car load lots for cash, a reduction of twenty per cent. can be made in above valuations, *i*, *e*.:

Available Phosphoric Acid	80 cents per unit
Potash (K2O)	88 cents per unit
Ammonia (or equivelent in nitrogen)	$2 40 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent and above in ammonia, 2 per cent or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its Commercial value is as follows:

8 per cent. ammonia @ $3.00 - - -	$24.00
2 per cent. available phosphate @ $1.00 -	2.00
1½ per cent. potash @ $1.10 - - - -	1.65
	$27 65

The commercial value being in excess of the market value.

There is a quantity of cotton seed meal offered in the State labeled "For feeding purposes only." These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent. potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia - - - - -	$13.50
1¾ per cent. phosphoric acid - -	1.75
1½ per cent. potash - - - - - - -	1.65
Commercial value - - - - -	$16.00

These goods are sold at $1.00 to $2.00 per ton less than prime meal Their relative value is $10.75 less than prime meal. There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of ammonia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis and pay for the actual content of the valuable elements only.

MARKET PRICES.

The following price of manurial chemicals is quoted by reputable dealers and importers in Jacksonville in lots of one to ten tons. The same figures can be made in Pensacola or Tampa, for spot cash f. o. b. cars:

	Less than 5 tons	5 to 10 tons	10 tons.
High Grade Potash 90 to 95 per cent. Sulphate (48 to 50 per cent K2O)	$52 00	$51 00	$50 00
Sulphate Potash, 48 to 55 per cent. Sulphate (25 to 30 per cent K2O)	32 00	31 00	30 00
Muriate Potash 80 to 85 per cent. Muriate (42 to 45 per cent. K2O)	46 00	45 00	44 00
Kainit 12 to 13 per cent. Actual Potash	15 00	14 50	13 00
Blood and Bone, 6½ per cent. Ammonia	26 50	26 00	25 50
Blood and Bone 7 to 8 per cent. Ammonia	27 50	27 00	26 50
Blood and Bone, 10 per cent. Ammonia	32 00	31 50	31 00
Raw Bone meal, 2 to 4 per cent Ammonia. 22 to 25 per cent. total Phosphoric Acid	32 00	31 50	31 00
Boneblack. 16 to 18 per cent. available Phosphoric Acid	25 00	24 50	24 00
Acid Phosphate. 14 per cent Available phosphoric Acid	13 00	12 50	12 00
Nitrate Soda. 18 to 19 per cent. Ammonia	47 00	46 50	46 00
Sulphate Ammonia, 24 to 26 per cent. Ammonia	72 00	71 00	70 00
Dried Blood, 17 per cent Ammonia	47 00	46 50	46 00
Ground Castor Pomace 6 to 7 per cent. Ammonia	21 00	20 50	20 00
Canada Hard Wood Ashes, 2 to 8 per cent. K2O (Potash)	15 00	14 50	14 00
Pulverized Tobaco Stems, 5 to 8 per cent. K2O (Potash)	15 00	14 50	14 00
Tobacco Stems (baled) 5 to 8 per cent. K2O (Potash)	16 00	15 50	15 00
Tobacco Dust, High Grade, 5 to 8 per cent. K2O (Potash)	21 00	20 50	20 00
Steamed Bone Flour, 3 to 4 per cent. Ammonia, 25 to 28 per cent Phosphoric Acid	25 00	24 50	24 00
Bright Cotton Seed Meal, 7 to 9 per cent. Ammonia	26 50	26 00	25 50
Dark Cotton Seed Meal, 6 to 8 per cent. Ammonia	22 00	21 50	21 00

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19		
Sulphate of Ammonia	21 to 24		
Dried Blood	12 to 17		
Concentrated Tankage	12 to 15	1 to 2	
Bone Tankage	6 to 9	10 to 15	
Dried Fish Scrap	8 to 11	6 to 8	
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	13 to 17	1½ to 2	

PHOSPHATE MATERIALS

	Pounds per Hundred.		
	Ammonia	Available Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphate			33 to 35
Florida Rock Phosphate			26 to 32
Florida Super Phosphate		14 to 19	1 to 6
Grounded Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissolved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actual Potash	Am'nia	Phosphoric Acid	Lime
Muriate of Potash	50			
Sulphate of Potash	48 to 52			
Double Sul. of Pot. & Mag.	26 to 30			
Kainit	12 to 12½			
Sylvinit	16 to 20			
Cotton Seed Hull Ashes	15 to 30		7 to 9	10
Wood Ashes, unleached	2 to 8		1 to 2	30 to 25
Wood Ashes leached	1 to 2		1 to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4		3½
Cow Manure (fresh)	0.40	0 to 41	0.16	0.31
Horse Manure (fresh)	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)	0.67	1.00	0.23	0.33
Hog Manure (fresh)	0.60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.26	0.70

R. E. Rose, State Chemist. Marion G. Donk, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.
(Samples taken by purchaser).

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	(Potash K20)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer	255	....	5 61	2 32	7 93	2 57	10 85	H. R. Harris, Galloway, Fla.
Lime Kiln Ashes	256	19 95	0 55	0 64	1 19	..	1 76	Schroeder & Auginbaw, Quincy, Fla.
Fertilizer No 1	257	....	4 66	1 16	5 82	5 69	6 73	W. I. Minor & Son, Coleman, Fla.
Fertilizer No 2	258	....	4 49	1 24	5 73	6 00	6 23	" " " " "
Fertilizer	259	8 45	6 04	1 54	7 58	2 32	8 76	W. F. Dees, Kathleen, Fla.
Fertilizer	260	11 65	7 68	1 43	9 11	2 15	11 69	C. W. Flanagan, Lakeland, Fla.
Sulphate of Potash	261	0 70	....	....	.....	....	51 16	" " " "
Blood and Bone	262	7 55	8 05	10 25	18 30	4 85	...	Willson & Toomer, F't'zer Co., Jacksonville
Special Mixture	263	9 00	6 62	1 39	8 01	4 00	10 10	" " " " "
Special Mixture No. 3	264	5 15	3 99	6 23	10 22	4 00	8 55	" " " " "
Blood and Bone	265	5 10	9 43	7 88	17 31	5 23	..	" " " " "
Fine Ground Bone	266	7 60	8 59	8 88	17 47	5 94		" " " " "
Florida Special Pineapple Fertilizer	267	4 55	2 76	5 71	8 42	4 19	9 75	" " " " "
Cottonseed Meal	268	6.85	....	....	2 29	8 48	1 54	" " " " "
Special Mixture	269	7 90	8 61	0 57	9 18	.....	19 66	" " " " "

NAME BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
Blood and Bone, H. G.	270	6 85	5 02	2 44	7 46	8 03	.....	Wilson & Toomer F't'zer Co., Jack'ville, Fla.
Ideal Blood and Bone	271	5 80	8 73	7 26	15 99	5 51	.....	“ “ “ “ “ “
Fertilizer	272	8 85	10 64	1 42	12 06	1 80	4 65	H. M. Foy, Ellenton, Fla.
Raw Pebble Phosphate	273	.....	.....	.....	29 02	.....	.....	M. Sellers, Wachula, Fla.
Fertilizer	274	2 50	7 27	12 85	20 12	0 51	11 37	Schroeder & Auguinbaw, Quincy, Fla
Ashes	275	.....	.....	.....	.....	.....	1 62	Chas. R. Tysen, Jacksonville, Fla..
Tobacco Dust	276	.....	.....	.....	.....	1 97	1 76	“ “ “ “
Hog Tankage	277	8 70	5 23	2 62	7 85	12 04	.....	Cudahy Packing Co., Kansas City.
Cattle Tankage	278	7 25	7 93	7 35	15 28	6 99	.....	“ “ “ “ “
Fertilizer No. 1 (Ashes)	279	4 55	.....	.....	.....	.....	4 39	George Kuhn, Pine Castle, Fla.
“ “ 2 “	280	4 80	.....	.....	.....	.....	4 28	“ “ “ “
“ “ 3 “	281	4 00	.....	.....	.....	.....	4 40	“ “ “ “
“ “ 4 “	282	3 72	.....	.....	.....	.....	4 08	“ “ “ “
“ “ 5 “	283	7 30	.....	.....	.....	.....	4 32	“ “ “ “
Fertilizer	284	8 90	5 72	0 88	6 60	3 58	12 34	W. A. Hogan, Osona, Fla.
Cottonseed Meal	85	.....	.....	.....	.....	6 75	.....	R. B. Penton, McDavid, Fla.
Kainit	86	5 15	.....	.....	.....	.....	12 00	Frank Adams, Jasper, Fla.
Fertilizer	87	5 95	5 85	2 06	7 91	0 20	18 00	Stanyarne Burrows, Kissimmee, Fla.
Canada Ashes	88	18 00	.....	.....	.....	.....	3 55	Willson & Toomer Fert Co., Jack'ville, Fla.
Ashes	89	18 25	.....	.....	.....	.....	4 71	“ “ “ “ “ “
Ashes	290	13 15	.....	.....	.....	.....	4 23	“ “ “ “ “ “

BUREAU OF FERTILIZERS—Continued.

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid. Available	Phosphoric Acid. Insoluble	Phosphoric Acid. Total	Ammonia	Potash (K2O)	BY WHOM SENT
H. G. Tankage	291	8 35	3 89	2 02	5 91	10 43	....	Wilson & Toomer Fert. Co., Jacksonville, Fla.
Sulphate of Potash	292	0 06	....	....	....	....	49 64	John J. Lee, Orlando, Fla.
H. W. Ashes	293	0 85	....	....	....	....	3 79	Trugate & Co., Port Ogden, Fla.
Ashes	294	18 40	....	....	....	....	1 50	J. R. Tysen. Jacksonville, Fla.
Cotton Seed Meal	295	....	....	....	....	8 34	....	J. R. Tysen, Jacksonville, Fla.
Sulphate of Potash	296	....	....	....		....	48 36	J. A. O. Kane, Pebble, Fla.
H. W. Ashes No. 1	297	....	....	....	....	....	2 58	H. Price Williams, Miami.
H. W Ashes No. 2	298	....	....	....	....	....	3 89	H. Price Williams, Miami.
Fertilizer No. 3	299	....	2 81	2 63	5 44	8 00	10 74	H. Price Williams, Miami.
Fertilizer No. 4	300	....	6 24	0 23	6 47	4 02	12 99	H. Price Williams, Miami.
Fertilizer	301	....	7 74	0 67	8 41	4 71	7 22	R. H. Brown, Youmans, Fla.
Fertilizer	302	....	7 23	2 28	9 51	4 11	5 48	S. E. Wiggins, Youmans, Fla.
Kainit	303	6 55	.	.	....	....	13 75	Armour Fertilizer Wks. Jacksonville, Fla.
Fertilizer	304	8 20	5 64	2 94	8 58	2 73	12 99	Planters Manufacturing Co. Lake Mary Fla
Fertilizer	305	3 45	5 63	1 02	6 65	2 62	11 62	James Hicks, Lakeland, Fla.
Fertilizer	306	3 80	5 39	1 83	7 22	2 80	10 80	N. C. Peters, Lakeland, Fla.
Fertilizer	307	9 60	6 47	2 02	8 49	4 27	5 57	W. B Hicks, Lakeland, Fla.
Fertilizer	308	5 40	5 43	1 44	6 87	2 48	9 76	J. W. Richards, Gillette, Fla.
Fertilizer	309	6 30	5 20	1 60	6 80	2 60	10 76	Brown Griffin, Lakeland, Fla.
Fertilizer	310	9 58	6 64	1 91	8 55	2 19	11 07	J. E. McGraw, Lakeland, Fla.
Fertilizer	311	8 75	6 94	1 99	8 93	4 21	5 52	W. A. Merryday, & Co., Palatka, Fla.

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insolute	Total			
Fertilizer No 1	312	6 90	5 34	2 80	8 14	4 53	5 84	J. R. Davis, Bartow, Fla.
Fertilizer No 2	313	8 10	5 63	3 32	8 95	4 70	6 46	J. R. Davis, Bartow, Fla.
Fertilizer	314	6 65	10 79	0 35	11 14	.....	21 44	I. E. Berry, Manchura, Fla.
Delray Special	315	10 95	3 28	0 49	3 77	5 04	2 41	Armour Fertilizer Works Jacksonville, Fla.
Special Mixture No 1	319	9 55	6 93	2 99	9 92	3 50	6 54	Z. C. Chamblis, Ocala, Fla.
Special Mixture No 2	320	7 85	6 50	1 64	8 14	4 28	6 53	Z. C. Chamblis, Ocala, Fla.
Ground Bone	322	3 70	12 87	12 65	25 52	3 04	.....	A. L. Wilson, Quincy, Fla.
Fertilizer No 1	323	.....	7 82	1 31	9 13	4 07	7 61	Tampa Fertilizer Co., Tampa, Fla.
Fertilizer No 2	324	.....	6 15	2 25	8 40	2 40	6 77	Tampa Fertilizer Co., Tampa, Fla.
Fertilizer No 3	325	.....	8 58	1 71	10 29	1 98	15 90	Tampa Fertilizer Co., Tampa, Fla.
Blood. Bone and Potash	326	.....	7 77	1 96	4 73	6 63	10 38	W. Fredrickson, Jensen, Fla.
Cotton Seed Meal	327	.....	.....	.....	.....	7 60	.....	E. H. Slappy, Havanah, Fla.
Sulphate of Potash B	328	1 80	.....	.....	.....	.....	48 44	C. H. Dorman, Houston. Fla.
Fertilizer A	329	7 95	7 60	3 66	11 26	5 30	6 97	C H. Dorman, Houston, Fla.
Fertilizer No 3	330	11 30	7 67	1 41	9 08	4 34	5 36	W. A. Merryday & Co., Palatka, Fla.
Fertilizer No 4	331	11 00	6 22	1 71	7 93	4 44	3 17	W. A. Merryday & Co., Palatka, Fla.
Cremo Brand, Cotton Seed Meal	332	.....	.....	.....	.....	4 32	.....	S. L. Ditto and Co., Jacksonville, Fla.
H. G. Blood and Bone	333	.....	5 86	4 46	10 32	10 43	.....	Cudahy Packing Co., Jacksonville, Fla.
Fertilizer	334	.....	8 23	1 20	9 43	2 55	1 80	A. L. Wilson & Co., Quincy, Fla.
Fertilizer	335	3 90	5 54	1 37	6 91	2 65	10 31	A. V. Water, Gallaway, Fla.
Fertilizer	336	7 80	6 37	1 97	8 34	4 94	8 78	C. W. Dallom, Ellenton, Fla.

NAME OF BRAND	Laboratory No	Moisture	Phosphoric Acid			Ammonia	(Potash K20)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer	337	6 00	2 39	1 86	4 16	8 41	9 99	C. F. Way, Jensen, Fla.
Fertilizer	338	15 75	6 56	0 66	7 22	2 46	9 36	S. L. Langford, Hyman, Fla.
H. G. Blood and Bone	339	6 00	3 64	1 64	5 28	10 87	.....	John Douk, Tallahassee, Fla.
Kainit	340	.....	.....	.....	.....	....	12 56	W. M. Girardeau, Monticello, Fla.
Fruit and Vine Fertilizer	341	14 35	7 58	1 83	9 41	2 55	2 31	Henry Varnes, Johnstown, Fla.
Cave Earth	342	.....	.....	.....	4 60	11 70	0 90	W. D. Hendrickson, Palm Beach, Fla.
Fertilizer	343	10 35	9 26	1 72	10 98	1 79	14 22	J. D. Rushing, Tampa, Fla.
Fertilizer No. 1	344	10 55	8 76	0 00	8 76	6 24	9 64	A. C. Haynes, DeLand, Fla.
Nitrate of Soda No 2	345	1 60	.....	.....	.....	18 69	.....	A. C. Haynes, DeLand, Fla.
Fertilizer No. 3	346	6 25	4 33	5 72	10 05	8 87	...	A. C. Haynes, DeLand, Fla.
Indian Mound Earth	347	.....	3 26	4 56	7 82	.....	.....	H. W. Fuller, Braidentown, Fla.
Fertilizer	348	6 60	6 95	1 53	8 48	4 15	9 45	W. A. Bispham, Ellenton, Fla.
Fertilizer	349	.....	15 63	1 60	17 23	4 19	1 80	O. P. Shepherd, Winter Park, Fla.
Fertilizer	350	.....	10 77	3 31	14 08	3 92	2 95	R. L. Cowart, Ona, Fla.
Fertilizer No. 1	351	.....	6 85	3 67	10 52	4 84	4 63	W. W. Beney, Stuart, Fla.
Fertilizer (Leached)	352	.....	7 05	3 64	10 69	4 34	4 93	W. W. Beney, Stuart, Fla.
Fertilizer	353	.....	6 60	1 81	8 41	3 42	5 45	C. M. Smith, Oxford, Fla.
Bone Black	354	.....	2 89	31 85	34 74	.....	.....	John Frey, Bona Venture, Fla.
Pulverized Steamed Bone	356	7 75	13 66	10 11	23 77	3 64	.....	H. M. Sample, Ft. Pierce, Fla.
Fertilizer	357	3.60	8 20	4 33	12 53	4 65	6 88	James Anderson, Ft Pierce, Fla.
Fertilizer	358	.....	7 53	1 10	8 63	1 83	6 59	R. P. Bryan, Colman, Fla.
L. G. Blood and Bone	359	.....	7 45	3 53	10 98	6 72	...	Cudady Packing Co., Jacksonville, Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	360	....	8.22	4.54	12.76	1.97	10.70	J. E. Crow, Ossining, N. Y.
Fertilizer	361	12.60	6.43	2.36	8.79	2.34	8.74	Wm. E. Earle, angarine, Fla.
Canada H. W. Ashes	362	....	....	....	....	....	4.94	L. D. Klutes, St. Petersburg, Fla.
Special Mixture	363	5.15	5.91	2.60	8.51	6.17	8.37	C. F. Olmstead, Ft. Pierce Fla.
Fertilizer No. 1	364	....	3.19	2.07	5.26	....	13.68	Schroeder & Auginbaw, Quincy, Fla.
Fertilizer No. 2	365	....	5.94	7.60	13.54	....	13.54	" " " "
Fertilizer——	366	....	3.47	1.69	5.16	....	8.60	" " " "
Sulphate of Ammonia	367	....	....	....	....	23.34	....	F. D. Waite, Palmetto, Fla.
Nitrate of Soda	368	....	....	....	....	17.70	....	" " "
Dissolved Bone	369	....	19.77	0.25	20.02	....	....	" " "
Acid Phosphate	370	....	14.44	5.56	20.00	....	....	" " "
Special Mixture	371	....	8.30	2.35	10.65	4.12	14.03	" " "
Nitrate of Potash	372	....	....	....	....	12.09	41.40	" " "
Sulphate of Potash	373	....	....	....	....	....	49.40	" " "
Special Mixture No. 2	374	13.75	7.85	0.10	7.95	3.85	11.16	" " "
Blood and Bone	375	....	3.23	1.97	5.20	10.05	....	A. N. Hoofnagh, Ft. Pierce, Fla.
L. G. Sulphate of Potash	376	....	....	....	....	....	26.70	" " "
Dark Cotton Seed Meal	377	....	....	....	1.86	4.34	1.47	Fla. Cotton Oil Co., Jacksonville, Fla.
Tobacco Dust	378	....	....	....	....	2.68	9.43	James Holmes, Jensen, Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Availab e	Insoluble	Total			
Tobacco Dust	379					0.93	3.37	A. B. Mayer, Neptune. Fla.
Special Mixture	380		3.72	2.60	6.32	3.61	4.95	James Andrews. Ft. Pierce. Fla.
Blood and Bone	381		3.44	1.58	5.02	10.51		Dr. Henry Ehrlick, Ft. Pierce, Fla.
Blood and Bone No. 2	382		2.83	3.89	5.72	8.98		" " "
Potash (L. G. Su phate)	383						25.74	" " "
Potash No. 2	384						25.90	" " "
H. G Sulphate of Potash	385						49.24	Mrs. D. Justice, Ft. Pierce, Fla.
Ground Castor Pomace	386					6.22	0.47	" " "
Cotton Seed Meal	387				2.29	7.08	0.80	" " "

For values see heading "Bureau of Fertilizers."

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample" sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on following pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a "Special Sample."

R. E. ROSE, STATE CHEMIST, ANALYSIS OF FERTILIZERS, 1902, MARION G. DONK, ASSISTANT CHEMIST.
Samples taken by State Chemist under Section 1, Act approved May 22. 1901.

NAME OF BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Gem Fruit and Vine.....	203	Guarant'd Analysis.	5	6	1	......	2 50	10	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	8 75	7 69	0 95	8 64	3 13	11 20	
Cotton Seed Meal.......	204	Guarant'd Analysis.	......	......	......	......	8 00	......	Florida Cotton Oil Co., Jacksonville.
		Official Analysis....	......	......	......	......	8 15	......	
Cotton Seed Meal.......		Guarant'd Analysis.	......	......	......	......	......	......	E. O. Painter Fertilizer Co., Jacksonville.
	206	Official Analysis....	......	......	......	......	8 60	......	
Cotton Seed Meal.......		Guarant'd Analysis.	......	......	......	......	7 50	......	American Cotton Oil Co. Americus, Ga.
	205	Official Analysis....	......	......	......	......	8 70	......	
Cotton Seed Meal.......		Guarant'd Analysis.	......	......	......	......	8 00	......	Florida Cotton Oil Co., Jacksonville.
	207	Official Analysis....	......	......	......	......	7 31	......	

ANALYSIS OF FERTILIZERS—Continued.

Dark Cotton Seed Meal.	208	Guarant'd Analysis.	......	......	......	......	5 00	......	Florida Cotton Oil Co., Jacksonville.
		Official Analysis....	......	......	......	......	4 86	......	
Castor Pomace.........	209	Guarant'd Analysis.	......	......	......	......	......	......	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......		......	......	7 00	...	
Cuke Special	210	Guarant'd Analysis.	7 00	5 00	2 00	......	4 00	8 00	Standard Fert. Works, Gainesville, Fla.
		Official Analysis....	5 10	3 53	1 81	5 34	4 23	8 16	
Corn and Cotton Special Fertilizer.............	211	Guarant'd Analysis.	10 00	7 00	3 00	......	1 00	5 00	Standard Fert. Works, Gainesville, Fla.
		Official Analysis....	4 95	7 46	4 40	11 86	1 98	4 11	
Tree Grower............	212	Guarant'd Analysis.	7 00	7 00	2 00	......	5 00	5 00	Standard Fert. Works, Gainesville, Fla.
		Official Analysis....	5 25	3 93	3 39	7 32	6 00	4 70	
No. 1, Peruvian & Fish Guano Mixture.......	213	Guarant'd Analysis.	10 00	5 00	1 00	......	4 50	5 00	Florida Fertilizer Man'f'g Co., Gainesville, Fla.
		Official Analysis....	8 85	5 00	2 23	7 23	4 94	5 97	
Strawberry Fruiter.....	214	Guarant'd Analysis.	10 00	5 00	2 00	......	2 00	10 00	Florida Fertilizer Man'f'g Co., Gainesville Fla.
		Official Analysis....	8 80	6 91	1 68	8 50	3 16	8 06	
No. 3, Blood, Bone and Potash...............	215	Guarant'd Analysis.	10 00	4 00	2 00	......	4 00	4 00	Florida Fertilizer Man'f'g Co., Gainesville, Fla.
		Official Analysis....	9 25	5 66	1 72	7 38	3 98	5 11	
Goulding's Meal Mixture	217	Guarant'd Analysis.	12 00	9 00	1 00	......	1 00	1 00	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 30	11 39	0 60	12 49	1 29	1 55	
Export Super Phosphate	218	Guarant'd Analysis.	12 00	18 00	1 00	......	......	......	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	10 70	19 33	0 44	19 71	......	......	

ANALYSIS OF FERTILIZERS—Continued.

Cotton Seed Meal.......	219	Guarant'd Analysis. Official Analysis....	....	....		....	8 00 8 98	....	Goulding Fertilizer Co., Pensacola, Fla.
Bone Compound........	223	Guarant'd Analysis. Official Analysis...	12 00 11 25	8 75 8 27	1 00 5 86	...... 14 13	2 00 2 26	1 50 1 57	Goulding Fertilizer Co., Pensacola, Fla.
Cotton Seed Meal.......	224	Guarant'd Analysis. Official Analysis....	....	....	....	....	8 24 7 76	....	Georgia Cotton Oil Co., Albany, Ga.
Cotton Seed Meal.......	225	Guarant'd Analysis. Official Analysis....	... .	....	....	....	8 24 7 93	..	Georgia Cotton Oil Co., Albany, Ga.
Acid Phosphate........	226	Guarant'd Analysis. Official Analysis....	14 00 13 90	12 00 13 54	1 10 1 16	..... 14 71	....	....	Mutual Fertilizer Co., Savannah. Ga.
Cumberland Guano.....	227	Guarant'd Analysis. Official Analysis....	14 00 13 15	8 00 9 00	1 00 1 14	..... 10 14	2 00 2 21	2 00 1 25	Mutual Fertilizer Co, Savannah, Ga.
Desolved Bone Superphosphate.............	228	Guarant'd Analysis. Official Analysis....	10 00 18 65	8 00 9 69	1 00 2 10	 11 79	2 00 2 31	2 00 1 34	Cumberland Bone Phosphate Co., Portland, Me
Southern State Special Veg. Guano...........	229	Guarant'd Analysis. Official Analysis....	8 00 12 70	6 00 6 93	1 00 0 84	..... 7 77	4 00 4 11	5 00 6 41	Va.- ar. Chem. Co., Savannah, Ga.
Alabama Fertilizer.....	230	Guarant'd Analysis. Offical Analysis....	 10 61	8 50 8 97	2 00 2 80	..... 11 77	2 18 2 39	1 50 1 48	Va.-C r. Chem. Co. Charleston, S. C.
Fruit and Vine..........	231	Guarant'd Analysis. Official Analysis....	8 09 8 65	6 00 7 27	1 00 0 81	..... 8 08	2 50 2 63	10 00 10 71	Va.-Car. Chem. Co., Savannah, Ga.

Tip Top Tomato......	232	Guarant'd Analysis.	8 00	7 00	1 00	. .	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	10 90	8 07	1 12	9 19	4 74	4 18	
Champion Compound...	233	Guarant'd Analysis.	......	8 00	1 00	......	1 00	3 00	Va.-Car. Chem. Co., Charleston, S. C.
		Official Analysis....	14 10	9 07	1 80	10 77	0 98	4 35	
Georgia State Grange...	234	Guarant'd Analysis.	......	8 00	2 00	. .	2 00	2 00	Va.-Car Chem. Co.; Savannah, Ga.
		Official Analysis....	13 43	8 77	1 49	10 16	2 57	3 42	
Georgia State Standa'd.	235	Guarant'd Analysis.		8 00	2 00	....	2 00	2 00	Va.-(ar. Chem. o., Charleston, S. C.
		Official Analysis....	13 15	8 07	4 43	12 50	1 62	1 89	
Fertilizer No. 1.........	236	Guarant'd Analysis.	10 00	5 00	2 00	.....	5 00	4 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	9 25	7 08	5 55	12 63	4 91	3 73	
Extra Fruit and Vine...	237	Guarant'd Analysis.	10 00	6 00	1 00	......	2 00	14 00	So. Fert. Co., Orlando, Fla.
		Official Analysis...	9 15	6 58	1 62	8 20	2 27	13 88	
Carey's Special for Fruit	238	Guarant'd Analysis.	10 00	6 00	1 00	.	4 00	12 00	So. Fert. Co., Orlando, Fla.
		Official Analysis.. .	10 05	5 98	1 18	7 16	3 90	12 04	
Vegetable Fertilizer....	239	Guarant'd Analysis.	10 00	6 00	2 00	....	5 00	6 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	10 90	5 99	1 46	7 45	4 85	5 96	
Extra Fruit and Vine (Bone)...............	240	Guarant'd Analysis.	10 00	6 00	1 00	......	2 00	14 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	9 60	7 16	1 63	8 79	2 38	13 90	
No. 4 Fertilizer.........	241	Guarant'd Analysis.	10 00	6 00	2 00	.....	3 00	10 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	8 08	6 00	2 50	8 50	3 16	9 73	

Carey's Special for Fruit (Bone)................	242	Guarant'd Analysis.	10 00	6 00	1 00	......	4 00	12 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	8 90	7 30	1 44	8 64	3 98	12 83	
Fertilizer No. 2.........	243	Guarant'd Analysis.	10 00	6 00	2 00	......	5 00	10 00	So. Fert. Co., Orlando, Fla.
		Official Analysis ...	8 95	6 35	1 96	8 31	4 86	10 10	
Orange Tree Fertilizer..	244	Guarant'd Analysis.	8 00	6 00	1 00	......	2 00	10 00	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	9 50	7 22	1 91	9 13	1 97	9 23	
Ashes..................	245	Guarant'd Analysis.	......	......	....	......	......	5 50	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	4 70	......	......	......	......	3 75	
Lampat's Formula......	246	Guarant'd Analysis.	12 00	2 00	1 50	......	......	10 00	Schroeder & Auguinbau, Quincy, Fla.
		Official Analysis....	3 70	5 11	9 47	14 58	.....	12 14	
Lampat's Formula No. 1	247	Guarant'd Analysis.	4 00	3 00	1 00	......	......	12 00	Schroeder & Auguinbau, Quincy, Fla.
		Official Analysis....	5 00	2 34	2 44	4 78	......	12 85	
Ashes...................	248	Guarant'd Analysis.	15 00	......	......	......	......	4 00	Willson & Toomer Fert. Co. Jacksonville.
		Official Analysis....	18 60	......	......	......	......	3 54	
Peruvian Guano........	249	Guarant'd Analysis.	15 00	8 00	18 00	......	2 50	1 00	Willson & Toomer, Fert. Co., Jacksonville.
		Official Analysis....	12 65	7 97	24 97	32 94	2 22	0 89	
Blood and Bone Fertilizer..................	250	Guarant'd Analysis.	4 00	4 00	1 00	......	4 00	10 00	Barney Hart, Jacksonville, Fla.
		Official Analysis....	7 60	5 88	3 92	9 80	1 49	6 35	
L. G. Sulphate of Potash	251	Guarant'd Analysis.	......	......	......	......	......	26 00	Barney Hart, Jacksonville, Fla.
		Official Analysis....	......	......	......	......	....	27 82	

ANALYSIS OF FERTILIZERS—Continued.

Nitrate of Soda	252	Guarant'd Analysis.						17 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis	3 05					17 88	
Canada H. W. Ashes	253	Guarant'd Analysis.						4 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis						3 93	
H. G. Sulphate of Potash	254	Guarant'd Analysis.						49 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis						48 72	
Double Manure Salt	255	Guarant'd Analysis.						26 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis						26 60	
Blood, Bone and Potash	256	Guarant'd Analysis.					4 50	6 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis	5 45	8 68	2 57	11 25	4 98	6 75	
Gem Potato Manure	257	Guarant'd Analysis.	10 00	4 00	1 00		4 00	11 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis	6 10	6 48	0 95	7 43	4 33	10 81	
Gem Strawberry Special	258	Guarant'd Analysis.	8 00	6 00	2 00		4 00	10 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis	5 60	5 62	1 03	6 65	5 54	8 03	
H. G. Blood, Bone and Potash	259	Guarant'd Analysis.					7 00	10 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis	5 55	2 68	2 46	5 14	7 06	11 19	
Gem Orange Tree	260	Guarant'd Analysis.	8 00	5 00	3 00		4 00	6 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis	6 00	4 34	3 00	7 34	5 01	6 33	
Gem Vegetable Manure	261	Guarant'd Analysis.	8 00	5 00	3 00		4 00	6 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis	5 60	4 77	1 76	6 53	5 06	6 83	

ANALYSIS OF FERTILIZERS—Continued.

Armour's Celery Grower	262	**Guarant'd Analysis.**	......	5 00	1 00	......	8 00	4 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis....	5 70	4 71	2 34	7 05	8 40	8 11	
Armour's Lettuce Special............	263	**Guarant'd Analysis.**	10 00	8 00	2 00	......	7 00	4 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis....	6 95	5 72	0 99	6 71	6 78	5 45	
Armour's Strawberry Fruiter................	264	**Guarant'd Analysis.**	10 00	5 00	2 00	.....	2 00	10 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis....	9 65	6 49	2 40	8 89	2 50	10 90	
Armour's Orange Tree Manure..............	265	**Guarant'd Analysis.**	10 00	8 00	2 00	......	3 50	4 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis....	8 05	7 46	3 13	10 59	3 80	4 83	
Armour's Fruit and Vine	266	**Guarant'd Analysis.**	10 00	6 00	1 00	......	2 50	11 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis....	8 80	5 96	1 75	7 71	2 72	10 08	
Armour's Golden Fruiter	267	**Guarant'd Analysis.**	10 00	6 00	1 00	......	3 50	6 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis....	6 75	7 43	2 27	9 70	3 52	7 04	
Armour's Canada Ashes	268	**Guarant'd Analysis.**	15 00	......	......	......	......	5 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis....	......	......	......	......	......	3 19	
Swift Sure Fertilizer....	2 69	**Guarant'd Analysis.**	10 00	7 00	3 00	......	2 50	10 00	M. L. Shoemaker, Philadelphia, Pa.
		Official Analysis....	8 30	8 90	3 54	12 44	2 57	10 10	
Baugh's H. G. Vegetable	273	**Guarant'd Analysis.**	......	6 00	2 00	......	5 00	7 00	Baugh & Sons, Philadelphia, Pa.
		Official Analysis....	13 45	7 37	1 35	9 02	4 55	7 08	

PART III

MISCELLANEOUS.

EXTRACTS FROM BULLETIN NO. 75

OF THE

LOUISIANA

AGRICULTURAL EXPERIMENT STATION

WM. C. STUBBS, PH.D., Director.

Preservation of Cane Syrup.

BY WM. R. DODSON.

PART I.

Pure cane syrup is a most palatable, economical and wholesome food. The small farmer with a family in Louisiana should never be without the home-made product, yet in most instances it is absent from his table for the greater portion of the year. The urban population would consume a great deal more syrup if the pure article could be secured at all times at a reasonable cost. During the syrup-making season, and for a short time thereafter, it can generally be purchased without difficulty at a very reasonable price. However. at the approach of warm weather in the early spring or late winter, the syrups begin to ferment, and are soon out of the market. Thereafter the only product that is unadulterated is obtainable in very limited quantities in glass bottles or tin cans, and much of this that is labeled pure is a misrepresentation. Much of it is imperfectly sterilized and lost, and the price is correspondingly increased of that that keeps. Thus the cost places it out of the reach of the class of people who would ordinarily consume the greatest quantity and increase the market of good syrup at a reasonable price.

At the present time some preparations are being made in New Orleans to keep syrup in cold storage to supply the summer trade- This will partially alleviate the situation for the residents of that city, but will not help the farmer, except to increase the market for his product. The question of properly preserving cane syrup, is, therefore, a very important one.

An exagerated estimate of the difficulties to be overcome in preserving syrup in small duantities and a lack of knowledge of the real cause of fermentation, deters many farmers from attempting to maintain a home supply of good quality. The canning establishments have found it profitable and easy to put up mixed or adulterated syrups, and the markets have not been sufficiently exacting to compel them to do otherwise. Consequently a small quantity of pure cane syrup goes to market in cans ond bottles properly sterilized and sealed. A large quantity of corn syrup is put up in cans and labeled so as to mislead one as to the contents, and sold at good prices. The commissary of a large lumber establishment told the writer that they had sold twenty dozen cases (two dozen quart cans to a case) of such product in three months. The sample from one of the cans showed it to be corn syrup, prepared by treating starch of corn with sulphuric acid. While this kind of syrup may be perfectly harmless and a food of considerable value, there is a possibility of it containing arsenic from the sulphuric acid, and the product should be sold for what it is, even if there is no danger of it containing any poison.

There is no insurmountable obstacle in the way of preserving syrup without fermentation on every farm and plantation, nor of the canning establishment putting it up in attractive form, with a guarantee as to its keeping qualities and purity. If this were done, the home demade would increase and the market could be vastly extended, as pure cane syrup is apt to be popular where it is once established

CAUSE OF FERMENTATION.

Fermenting of cane syrup is caused by the growth of low forms of vegetable life, belonging to the classes of yeasts, bacteria and moulds. These organisms, in their development in the syrup, give rise to products that destroy the sugar and bring about the changes designated as fermentation.

No chemical substance, in normal syrup, can produce fermentation to any appreciable extent. The method of clarification of the juice, the temperature of the cooking, and so forth, cut no figure in the fermentation of the finished product, provided cleanliness is always observed, many popular statements to the contrary notwithstanding. It may be absolutely depended upon that the syrup will not ferment in the absence of the low forms of vegetable life mentioned above. On the other hand, when they are present in the syrup fermentation will progress whenever the temperature is favorable to their growth. Growth takes place most rapidly at temperatures from 86 to 104 degrees F. Temperatures higher than this limit generally retard growth or check it altogether, depending on the species of organism, and temperatures from 135 to 221 degrees F kill all forms completely. Low temperatures retard growth or stop it almost completely. hence the efficiency of cold storage. Therefore, to prevent fermentation, it is necessary to prevent the growth of these organisms. Omitting a consideration of cold storage, which is but temporary retardation, it may be accomphished in cane syrup in three ways. Two of them, practiced commercially, are not to be commended. They are as follows:

(1) A small quantity of preservative may be added, which will act as an antiseptic, and prevent the growth of all ferments. There are a number of chemicals that will accomplish this, and a number of patent preparations or preservatives sold under disguised names that are sometimes used. While a few of these seem to be harmless, we believe that eventually harm will come to the digestive organs of the consumer of any such preservatives. some preservatives on the market should be unconditionally condemned. We believe it is best not to use any of them at any time in any food for family use.

(2) Corn syrup is largely used to adulterate cane syrup, not only to retard fermentation, but to secure a lighter color, a greater density, and an excess of glucose hinders crystalization. Since corn syrup is usually much cheaper than cane syrup, dealers are tempted to add much more of the former than is really necessarr to prevent crystalization of the cane sugar present. Whenever we find a syrup on the markef of high density and very light color, it is extremely probable that it is not pure cane syrup. While a small quantity of corn syrup may not be very objectionable, the excessive adulteration practiced is much to be deplored, and results in great injury to the cane syrup industry. Low grade

molasses from the sugar-houses clarified by chemical processes are also used for adulterating syrup, or falsely labeled and sold as cane syrup.

(3) There is but one practical, sure and honorable way of preserving pure cane syrup, and that method is to cook it to a moderate density, sterilize it by heat and thereafter prevent contamination with bacteria, yeasts and moulds. This is readily accomplished in small bulk in glass vessels, jugs, tin cans and so forth, that can be sterilized and sealed by any one. The preservation of syrup in large vessels has not been practiced, possibly because those who fully understand the necessity of perfect sterilization have not made sufficient effort to economically overcome the mechanical difficulties in the way. We believe it very probable that these obstacles will be removed, and the sterilization of syrup in bulk will become a commercial industry. The suggestions and reports of experiments here to follow will be arranged under two divisions, (1) preservation of syrup in small quantities and (2) preservation in large quantities.

HINTS ON PRESERVING CANE SYRUP IN SMALL QUANTITIES.

It is not uncommon to find syrup that has been perfectly preserved in cans, bottles or jugs by small farmers throughout the State. They have simply observed the precautions that would have been taken by a person carefully putting up canned fruits. It is also not uncommon to meet with efforts that have brought disappointment and failure. Therefore, a few suggestions, following upon what has been given, may be serviceable to many desiring to put up syrup for home consumption.

THE SYRUP VESSEL.

Any vessel that can be made perfectly clean, will not break upon the application of heat, and admits of sealing, so as to exclude the air, will answer the purpose. If the syrup is made in an open pan, and the pan properly protected from dust, the syrup should be practically free from living ferments when it leaves the pan. The temperature of the boiling syrup is higher than that of boiling water, and soon destroys all ferments present. Practically there is more danger from the vessel not being properly sterilized than there is from the previous contamination of the syrup in the pan. The smallest fragment of dirt or foreign matter of any kind on the side or bottom of the vessel may serve to protect a number of ferments that would afterwards start fermentation. For this reason the vessel should be well cleansed just before the syrup is put in them. They should be gradually warmed so as to avoid breakage, and then allowed to stand in boiling water for a few minutes. They should then be quickly drained and the hot syrup drawn into them, making every effort to avoid getting syrup on the sides of the vessel where it must be sealed or corked. A little syrup dropped on the side of the opening of the vessel may afterwards furnish nutritive material for the development of ferments that will eventually work their way into the mass. For jugs and bottles one should use only clean new corks that have been boiled in water or brine. Old corks are apt to be filled with moulds. No one with dirty hands should be allowed to touch the corks or covers at any time. The corks should be taken immediately from the water in which they have been boiled and inserted in the mouth of the jug or bottle. A good coating of melted sealing wax poured on top of the cork will serve to prevent moulds from working down through any holes in the cork. Bees-wax, paraffin, grating wax or any similar substance will serve the purpose. Stoppered tin cans should be treated in the same way. Cans with lids should have the lids soldered on immediately. Fruit jars may have their caps screwed down tight at once, or after partial cooling. The vessels should then be placed where the high temperature can be maintained for some time, say a half hour. Often it will be sufficient to wrap a heavy cloth around the vessel to prevent too rapid cooling. If one wishes to have greater assurance against losses, the temperature must be maintained long enough to kill all ferments that may have dropped into the vessels during the process of filling. However, the temperature must not be allowed to go much above what it was when placed in the vessls, as the expansion of the air above the syrup may blow out the stopper or break the vessel. In fruit canning factories the filled cans are soldered and a pin hole left at some point in the cover for the escape of air; the cans are then raised to the boiling point, or very near it, and a drop of solder placed on the pin hole, sealing it completely. The cans are then maintained at a high temperature long enough to secure sterilization. The same thing may be done with syrup. Vessels containing the syrup may be kept hot for any desired time by placing them in a barrel or tight box, into which is led a jet of steam. A large stove boiler over a hot fire may be made to serve the purpose by putting a few inches of water in the bottom and arranging a shelf just above the surface of the water on which to place the syrup uessels.

If the syrup cannot be drawn directly from the pan into the vessel for keeping, it should be reboiled or kept near the boiling point for twenty or thirty minutes just before filling the vessels.

Of course, one should be careful not to concentrate the syrup too much One may think it too much trouble to take all these precautions, but it insures the keeping of the syrup, and is really cheaper in the long run than to perform the work without due regard to the principles of destroying and excluding ferments, and thereafter lose a part or the whole of the syrup.

There is rather a widespread idea that fermentation will not take place in the absence of air, and all that is necessary to prevent fermentation is to exclude the air. This idea is a false one, and the party who puts us syrup and seals it, without first having secured sterilization, will find to his sorrow that there are ferments that develop in the absence of free air. Such ferments, however, are less active than many of those that require free oxygen, and for that reason fermentation may be retarded for a considerable length of time. *The important thing is to kill all ferments in the syrup and vessel by heat, and thereafter prevent others from gaining entrance.*

In our exseriments in preserving syrup in fruit jars, under the precaution given above, none were in the least fermented at the end of one or two years, as will be seen from the following analysis of one of the samples, taken at the time of manufacture:

Total solids by Brix	64.05
Sucros	54.96
Glucose	3.68

The following is the analysis of the same syrup from one of the tin cans sterilized after it was filled, and then allowed to stand nearly one year (frem December 1899, to November 14, 1900):

Total solids by Brix	63.15
Sucrose	54.08
Glucose	3.67

Where jugs and bottles with corks were used, and no sealing wax placed on the tops of the corks, the syrup in most of them was more or less fermented. The following analysis is from one of the gallon jugs treated in this way:

Total Brix	65.50
Sucrose	33.70
Glucose	31.44

Here the decreased sucrose and increased glucose tell plainly of fermentation.

Where hot sealing wax was poured over the exposed portions of the cork immediately after the vessels were filled very few were lost. This is explained probably by the fact that the corks are all porous, and they absorb enough syrup to supgort the growth of ferments that eventually find their way to the interior of the vessel, having started on the outside and gradurlly worked their way through the cork. The wax applied to the outer surface of the cork prevents this growth of ferments.

The following is an analysis of the same syrup kept from December, 1899, to November 14, 1900, after treatment as above in a gallon jug:

Total solids by Brix	63.40
Sucrose	54.20
Glucose	3.70

For keeping syrup for family use, we reccomend the ordinary glass fruit jars. They are less trouble than other vessels, and can be used year after year by renewing the rubbers, and occasionally the tops, and, in the end, they are the cheapest. For marketing, tin cans and bottles best serve the purpose.

The farmer who produces a small quantity of cane for syrup-making should provide for keeping it on his table the entire year by properly bottling or canning and sterilizing the required amount. He should find the syrup equally palatable at all seasons, and quite econical.

The above syrups were all taken from the same pan, and the close proximity of identity in analysis shows that no appreciable change in the syrup came about during the eleven months wherever sterilization was secured and the vessel sealed in that condition.

CANNING SYRUP FOR MARKET.

While the canning factories of the city put up some syrup as a supplementary business, and some few planters sell to the retail trade during a part of the year, there are only one or two parties, so far as the writer is aware, in Louisiana who make a specialty of putting up pure cane syrup for the retail trade on an extensive scale, and for the purpose of supplying the market at all times of the year. There is a good opening for the development of a lucrative business for the party who will properly handle his syrup, putting it up in attractive form and sending out only a first class article. During the limited season of syrup-making the hot syrup, we believe, could be conducted into large sterilized tanks, and left there till needed to fill cans and bottles to supply the trade. If this is carefully done, and the cans and bottles well sterilized, there should be no losses from fermentation, and a guarantee could be furnished with all sales that the syrup would remain perfectly sweet till opened and again exposed to the air. The consumer would use one of these cans or bottles before fermentation would take place.

EXPERIMENTS IN THE STERILIZATION AND PRESERVATION OF SYRUP IN BULK.

Although syrup may be preserved perfectly in small vessels, the cost and labor of the same becomes an item of serious consideration when large quantities are to be dealt with, and it would be a matter of economy and convenience if we could find a method by which syrup could be cheaply preserved in large bulks. To ascertain if syrup once sterilized in good barrels would remain sterile, the following experiments were undertaken.

Experiment No 1:

The object of this experiment was to ascertain to what extent fermentation would be prevented in thin syrup in wooden vessels by sterilizing the kegs and filling them with the hot sterilized syrup.

Two cypress kegs, holding five gallons each, were sterilized by allowing a jet of steam to escape in the bung hole for n half hour. This was accomplished by turning the keg over the open end of a vertical steam pipe, the pipe passing through the bung hole and ending near the opposite wall of the keg. Immediately after sterilization in this manner they were filled with the hot syrup through a faucet from the open pan, and then stoppered with bungs that had been boiled for a half hour. The syrup was cooked to a density of 22 degrees Baume (much thinner than desired for table use, and, consequently, more favorable to fermentation). In so large a bulk the temseratures remains high for quite a long time. It is not unlikely that the syrup was perfectly sterilized. During the following summer considerable leakage took place, but the kegs were not opened till November 20. eleven months after they had been filled. When opened, the syrup was completely fermented. Cultures were made from the syrup; and it was found to contain, moulds, yeasts and bacteria.

Experiment No. 2.

In order to more assuredly secure sterilization of both syrup and keg, two five gallon cypress kegs were filled with the same syrup as above, after the following manner: The kegs were filled with strong salt solution, and boiled for nearly an hour by an injected steam jet. The brine was emptied and the kegs steamed for half a hour, as above, to remove the salt water. While the steaming was going on cotton was arranged about the pipe so as to filter any counter currents of air that might pass into the keg. Without removing the pipe the keg was inverted, the pipe turning on an elbow, and through this same pipe the keg was filled with syrup, the same as used in Experiment No. 1, except, that as it passed from the open pan to the keg, it was retained in an autoclave and heated under pressure to a temperature of 245 degrees F. for fifteen minutes. There can hardly be a doubt that the kegs were stoppered in a sterile condition. The kegs were painted, but at the approach of warm weather leakage began. November 20, eleven months after filling, the kegs were opened, and the syrup was found to be completely fermented.

Experiment No. 3.

One year after the above results were obtained the experiment was repeated, with slight modifications, so as to absolutely insure complete sterilization of the entire keg.

Two clean five-gallon kegs were steamed and fiilled with syrup directly from the open pan, and immediately corked, except a pin hole at the bung. The kegs were then put in a steam oven and heated under pressure to a temperature of 230 to 232 degrees F. for an hour and a half. The tseamchest was gradually cooled, and, when below the boiling point, was opened and pin holes in the kegs stopped with sterilized pegs. It is safe to say the kegs were completely sterilized from surface to center. During the summer of 1900 the kegs leaked some, and fermentation was complete. Cultures showed the presence of yeasts, moulds and bacteria.

CONCLUSION.

These results would indicate that syrup at a density of 22 degrees Baume cannot be preserved in wooden vessels by sterilization, unless a better quality can be secured than is now on the market. There is no doubt, however, that clean kegs or barrels fiilled with hot syrup will approach sterilization that will retard to some extent the fermentation.

In the above the ferments were able to work their way through the small cracks where leakage was taking place until they emerged in the interior of the keg, and then gradually spread throughout the mass. It may be that we will find some substance that will seal all cracks and holes in wooden vessels, or some seamless non-permeable lining that is not expensive, and thus completly stop all leakage. Then we may be able to preserve syrup at as low density as that given above without great difficulty.

Experiment No. 4.

Two kegs holding five gallons each were steamed, as previously described, and filled with syrup that had been cooked to a density of 36 degrees Baume. The syrup was drawn from the open pan into an autoclave and heated under pressure to a temperature of 245 degrees F. for fifteen minutes, and transferred to the keg without coming in contact with the air. When filled the kegs wers stopped with sterilized bungs. Eleven months afterwards the syrup from one of the kegs was analyzed with the following result:

Total Brix	69.1
Sucrose	46.5
Glucose	13.88

The analysis was made by Mr. R. Glenk, assistant chemist, Audubon Park, New Orleans. Apparently the two kegs were in the same condition, and only one was analyzed. It will be noted that the density had increased, due mainly to evaporation during sterilization. The flavor was not altered, and there was no crystalization in the keg.

Experiment No. 5.

This differed from the preceeding only in that the syrup was not heated in the autoclave, being drawn directly from the open pan into the keg. Every precaution was taken, however, to prevent contamination in transferring the syrup to the kegs. During the summer both kegs leaked a little. When the analysis was made in November of syrup from one of the kegs, the following results were given:

Brix	67.4
Sucrose	47.10
Glucose	11.36

Analysis also made by Mr. Glenk. Only one was analyzed, as they had the same density, and seemed to the eye and the taste to be the same. Although the density was a little high, there was no crystalization.

Experiment No. 6.

CONTROL.

One keg was filled with the same syrup used in Experiments 4 and 5. The syrup was allowed to cool, however, in an open tank, and the keg was well washed without sterilization. The keg was stopered the same as the others. When the syrup was withdrawn at the same time with the same samples given above it was so badly fermented that no analysis was deemed necessary.

CONCLUSION.

Since the kegs were kept in the second story of a frame building, where the summer temperature was frequently quite high, very favorable conditions for fer-fermentation were given. Since the syrup of 36 degrees Baume density, that was not sterilized, fermented very badly, and that which was sterilized fermented but little, one must conclude that the sterilization was responsible for the preservation. Thick syrup, sterilized in tight wooden vessels, can be kept practically without fermentation during the entire summer.

SPANISH MOSS AS A FILTER FOR CANE JUICE.

Some years ago the agricultural press of the South quoted extensively from a publication on the use of Spanish moss as a filter for cans juice in syrup-making, in which the auther claimed that the use of a compact mass of black Spanish moss, for filtering the juice as it came from the mill, would prevent fermentation and crystalization in the syrup resulting therefrom. Later publications from the author reiterates the claims first published. Speaking of the moss he says: "It not only thoroughly strains coloring matter and impurities from the juice, but at the same time removes the germs of fermentation to such an extent that syrup made from juice thus treated may be kept indefinitely without danger of fermentation or souring." This article has also been widely quoted, but has called out no important publication giving the results of other investigators either confirming or contridicting these statements. Some experiments were conducted in this line by Dr. W. C. Stubbs, director of the Louisiana Expeirment Station, at New Orleans, 1900.

As these results in a large degree contradict the claims set forth in the articles referred to, we had decided not to publish them, unless the matter of using the moss filter was revived. As the matter has again been brought into the press by the original author, publication of our results seems advisable.

First as to the removal of ferments from the juice: To one who has had practical experience of the difficulty of securing even approximate sterilization by filteration, such a statement seems very extraordinary. At best, this crude filter could only remove the larger fragments of cane and foreign matter to which ferments would adhear. Quantitative determination of the number of yeasts and bacteria per cubic mm. of juice before and after filtration were made, the results indicating a greater number after filtration.

Cultures were then made from small pieces of moss that had not been used, and it was found to be a harbinger of a great multitude of yeasts and bacteria. It is not strange, however, that these forms of vegetable decomposition are present when it is remembered that the moss is simply the fiber portion of the plant *Tillandsia usneoides,* the cortex, or bark, having decayed and dropped away. Many of the organisms that brought about the decomposition of the bark would naturally cling to the surface of the fiber remaining. Again, the matter of a comparatively small number of ferments in the juice as it enters the pan for evaporation is of little or no importance. If the juice is rapidly worked up and not allowed to stand till active fermentation begins, the ferments present will not have an appreciable effect on the composition of the juice, and they will all be killed when they reach the pan. As the juice thickens from evaporation the temperature rises above the boiling point of water till, at the end of the process of boiling, the temperature will be in the very close neighborhood of 221 to 225 degrees F. This temperature kills almost all organic ferments in a very short time. Only exceptional forms will stand a boiling temperature of water for any considerable time.

Several times we drew a small quantity of syrup into a sterilized glass tube from a cooking pan of syrup at a density of about 22 degrees Baume, and when this sample was planted in culture-media it proved to be sterile in a great many cases. Samples at a greater density showed a greater per cent of sterility. Small quantities of third sugars and molases, probably containing a greater number of ferments than would any ordinary sample of cane juice, were quickly sterilized at a temperature of 225 dedrees F.

Thinking possibly the moss might impart some antiseptic principle to the juice, and thereby retard fermentation, we took two glass vessels and filled them with clean moss. In one we poured juice from that had previously been sterilized and covered the vessel with a sterileeven so that all the ferments in the fluid would have to come from the moss itself. The other vessel was filled with juice that had not been sterilized. Both vessels were put in the incubator and kept at a temperature of about 98 degrees F. for twenty-four hours. At the end of that time the juice in both vessels had badly fermented, there being apparently no difference in the two. The moss that was left in the filter at the end of the experiment at the sugarhouse was badly fermented a day or so afterwards. There is, therefore, no evidence that the moss possesses any antiseptic principle to preserve juice or syrup. Indeed, if it did, why should it not retard or prevent the decay of the cortex about it?

Syrups cooked to the same density from juice filtered through moss, and that not so filtered, crystalized so nearly at the same time that labels only would enable one to tell the two vessels were from different methods of treatment.

It is to be regretted that the results are at variance with the results published from other sources. In our experiments the moss acted only as an imperfect mechanical filter, did not present the syrup from fermenting, and did not make any difference in crystalization when a hight density was obtained.

FERMENTATION IN CANE DUE TO EXTERNAL CAUSES.

In order to ascertain whether there were enzymes or other chemical substances capable of working changes in the sugar content of sugar cane, or that might be carried over into the syrup, the following experiments were made under conditions such as to exclude the effect of excessive heat, which might destroy the enzymes.

Experiment No. 1.

The stalks of cane were washed as clean as possible with clear water, then scrubbed in a solution of bichloride of mercury, strength 1 to 500. Two sections of three internodes each were cut from each stalk with a sterilized knife, and dropped temporarily in the bichloride solution. Two sections, one from each stalk, were rinsed with sterilized water and placed in large glass tubes, previously stoppered with cotton plugs, and sterilized. The tubes were then frozen for twenty-four hours in a mixture of ice and salt. The tubes were then transferred to a warm room and kept for several weeks, when an analysis was made by Mr. R. E. Blouin, Assistant Director of the su-Sugar Experiment Station, Audubon Park, New Orleans.

Both specimens were fermented and moulded, and bacteria were abundant, showing that sterilization had not been effected. One of the stalks polarized 0.03 per cent sucrose, while the other showed 0.37 per cent. It is probable that ferments were protected by small particles of resin on the surface of the cane, or about the leaf scar, and were not reached by the bichloride solution.

Experiment No. 2.

The two sections, of three internodes each, had the outer rind removed while submerged in bichloride solution. They were then rinsed with sterilized water and placed in tubes, as above described, frozen, and placed in same conditions as above, and several weeks afterwards were analyzed by Mr. Blouin. One gave sucrose 11.2 per cent., and the other 12.4 per cent. The specimens were in perfect condition, and gave no indication what ever of any fermentation having taken place.

Experiment No. 3.

Fearing that possibly ferments might have worked their way into the tissues of the node through the ends of the vessels not completely closed at the shedding of the leaf, two sections were treated the same as the above, except that the nodes were removed as well as the rind, laving only the pithy portion of the internodes. These were also frozen, and afterwards placed in the warm room with the others as above described, and analyzed at the same time. One tube polarized 11.8 per cent. sucrose, the other 12.4 per cent. They were in a perfect condition.

Experiment No. 4

Four sections, of three internodes each, were placed in tubes the same as the others, but with no attempt to secure sterilization. Two of these tubes were frozen, and two were not. They were placed under the same conditions as above described. In the two that had been frozen fermentation took place so quickly that they were removed and no further consideration was taken of them. This, of course, was to be expected. The other two began fermenting at the ends, and when the analysis was made fermentation was complete.

Some sterilized cane juice was kept for two years at Audubon Park in glass-stoppered bottles, the bottles having been filled and sterilized by heating to boiling for fifteen-minute periods on three successive days. At the end of the two years the juice analyzed one-tenth of 1 per cent. less than did the juice immediately after sterilization. The first analysis was made by Mr. Charles Crumbhaar, the second by Mr. J. Harp, Assistant Chemist at Audubon Park, the analysis showing, respectively, 11.9 and 11.8 per cent. sucrose.

Small pieces of cane have been kept after sterilization for weeks in the laboratory without apparent change, and some pieces were sterilized and sealed in test tubes and kept for a year, with no appreciable change, so far as could be determined without analysis. These pieces fermented in the normal manner when ferments were planted on them.

CONCLUSION.

It seems, therefore, that the inversion of sugar in the stalk of the cane is dependent upon the invasion of organic ferments from without. Freezing of cane facilitates the entrance of these ferments, but as long as they are excluded, no fermentation will occur.

Since they do not exist in the cane, there would be no enzymes in the syrup capable of working a material change in the sucrose or glucose content. These results are fully confirmed by the results in the preservation of syrup.

Note—The foregoing extract is Part I of Bulletin No. 75 of the Louisiana Agricultural Experiment Station. Persons interested in the subject should write Dr. Wm. C. Stubbs, Director, at New Orleans, for the Bulletin. Part II. "The Enzymes of Sugar Cane" and Part III. "The Relation of Bacteria to the Inversion of Crystalized Sugar," are of much interest to those engaged in clarifying syrups, and refining sugars. The "Moss Filter," so called, has for years been used as a strainer for cane juice; it has the advantage over "Excelsior," "Gunny Bags," Flannel," "Sand" and "charcoal" strainers in being convenient, ready obtained, and above all, of being easily cleaned. No filter or strainer, will remove the ferments; only the mechanical impurities can be removed by straining or filtering—moss can be washed and boiled, thus thoroughly removing the ferments, and sterilizing the filter, the tub, or juice barrel, should be scalded; the moss, or other strainer, washed and boiled, every morning before beginning to grind. The mill should be washed off, and all other utensils also; and all of them should be well rinsed in lime water, before beginning the days work. The same care and cleanliness should be ob-observed, about a syrup or sugar mill as is in a first class kitchen or dairy. The utensils, mills, strainers, (filters) skimmers, troughs, etc., should be kept scrupulously clean and free of ferment germs, as is done in any well kept dairy. While it may be possible to preserve syrups in a wooden barrel, it is seldom accomplished. The care and labor involved in sterilizing a wooden vessel is great, and the result uncertain, iron tanks, cans, jugs, glass bottles, or demijohns, can be readily sterilized by steaming, or boiling. If *filled* to the top with hot syrup, drawn from the pan or the kettle, corked, and sealed while hot, it can be and is preserved for an indefinite time, large cans, 10 to 20 gallons each—or even larger, may be had at little if any greater cost than wooden barrels.

Syrup boiled to 34-36 degrees, Beaume, sealed hot in clean (sterilized) cans, jugs or bottles, will keep perfectly until opened.

Nothing will prevent syrup from fermenting when exposed to the atmosphere. The so-called presenatives, will not preserve, if the syrup is exposed to contamination by ferments, which are universally distributed; and are found in excessive numbers in most pantries, store rooms, closets and warehouses; and particularly in sugar houses and ware rooms.

R. E. ROSE.

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SPECIAL NOTICE.

The attention of persons sending samples of fertilizers for analysis is called to the following:

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER SAMPLES TO THE COMMISSIONER OF AGRICULTURE. —SECTION 15 OF LAW.

Special samples of fertilizer sent in by purchasers, under Sec. 9 of the law approved May 22, 1901. Shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed and a FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICTLTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN CR BOTTLE WILL BE ACCEPTED FOR ANALYSIS This rule is adopted to secure fair samples of sufficient size to make the six recessary determinations, viz: Moisture, available and insoluble phosphoric acid, ammonia and potash; and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means, of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

COPIES OF THE FERTILIZER LAW.

Citizens interested in the fertilizer law of the State, and desiring to avail themselves of its protection, can obtain a copy free of charge by sending for same to the Commissioner of Agriculture.

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FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

SEPTEMBER 1, 1903.

B. E. McLIN,
COMMISSIONER OF AGRICULTURE,
TALLAHASSEE, FLORIDA.

Part 1.—Crops. Part 2.—Fertilizers.
Part 3.—Miscellaneous

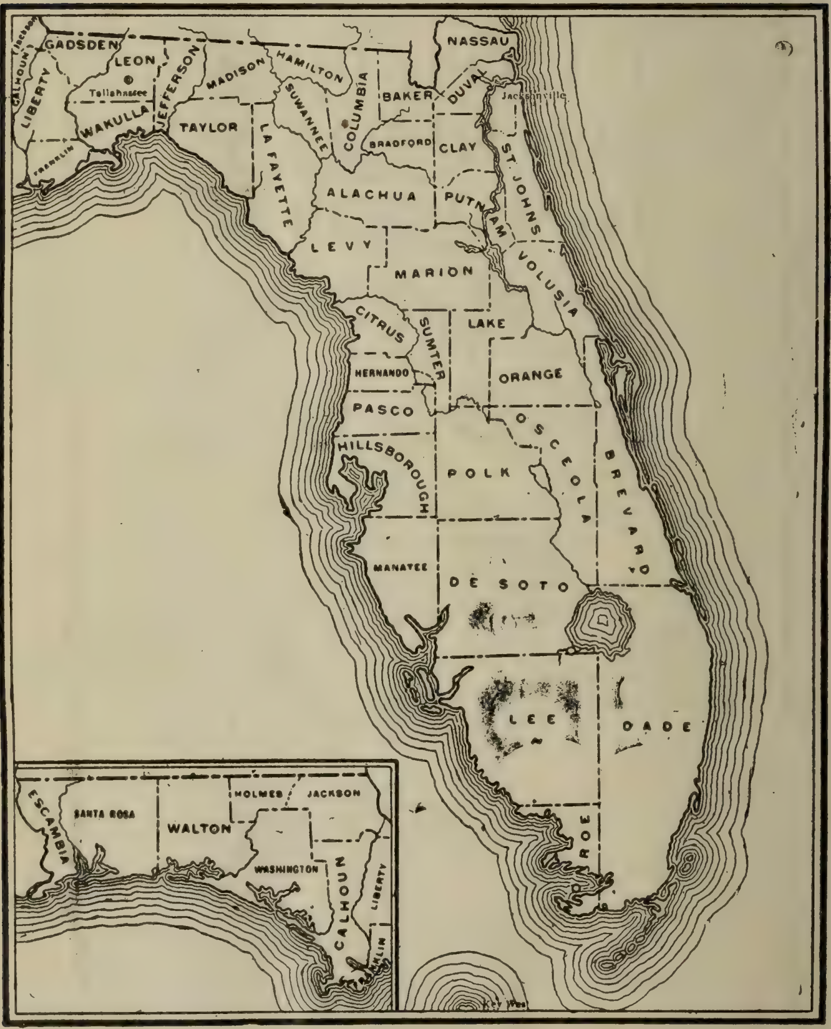
Entered January 31, 1903, at Tallahassee, Florida, as second-class matter, under Act of Congress, of June 1900,

These Bulletins are Issued free to those requesting them.

TALLAHASSEE, FLA.,
I. B. HILSON, STATE PRINTER.

County Map of the State of Florida.

(For the Bulletin.)



PART I

CROPS.

DEPARTMENT OF AGRICULTURE.

Hon. B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

ALACHUA COUNTY—The rains have been more than were necessary for the making of crops generally, but no very severe damage has been done yet, and a fair average yield will be had in most cases.

BAKER COUNTY—The condition of almost all crops is off almost half, owing to the excessive rain which fall almost every day; cotton is troubled with bugs, and is shedding badly, and much longer continued rain, will make the crop a failure, practically; corn rotting in the field; sweet potatoes poor and stringy; some cotton ready for picking if weather permitted.

BRADFORD COUNTY—The crops of this county are doing well on the average; as yet the weather has not damaged the crops worth mentioning; nearly all crops will be large, if nothing unfavorable happens.

BREVARD COUNTY—So far, the crops now growing in this county are doing well, and if no accident happens to them, the fruit crop especially, will be fine.

CALHOUN COUNTY—The average condition of crops in this county is very good; some interest is again being taken in orange and grape fruit culture.

COLUMBIA COUNTY—We are having entirely too much rain for all crops; cotton on low lands is badly damaged; too wet for potatoes and peanuts, and the rains wash the pollen from all vine plants to such an extent that fruit does not hold but drops before forming.

DADE COUNTY—The weather is extra fine for growth of citrus trees; rains are light as yet, but well distributed; field and fruit crops are both good.

DESOTO COUNTY—Up to date, the year and season has been favorable for all field crops and fruit. If nothing unlooked for happens, all crops will be good.

Franklin County—Such crops as we grow are doing well. Weather is perfection for planting and forcing fall truck gardens, which is now in progress; gentle rain is plenty.

Gadsden County—we are having too much rain for cotton, but other crops are not injured yet. The yield of tobacco is near 50 per cent above the usual crop.

Hamilton County—Crops will yield only medium this year; the unfavorable seasons, from planting to the present, will serve to shorten the crops considerably.

Hillsborough County—Crops of all kinds in this county are doing well; orange crop will be fine, also grape fruit.

Holmes County—The seasons have been generally good and crop prospect favorable; if they continue or improve we will yet make a fair average crop.

Jackson County—Altogether we have had pretty fair seasons for crops this year; most of them are in fair condition and will yield about an average; hay crop is particularly fine.

Leon County- On an average the crops will show up well in this county; there is quite an increase in cotton yield over last year, and a larger increase in the corn crop; other crops are doing very well also, and will yield about up to the average.

Levy County—Crops of this county are doing very well, seasons generally have been favorable and most crops will yield an average if no unlooked for accident occurs.

Liberty County—The general average of crops throughout this county will be good; most of the crops are doing well, and fair yields are anticipated.

Madison County—Sea Island and upland Cotton have both begun to rust in places, and the standard of condition may be lowered very much in the next ten days. The weather has been very unfavorable for cotton for two weeks, with heavy rains and hot sunshine following; other crops in fair condition, and will yield average crops.

Manatee County—A great deal of spring rice was injured by rust; the fall crop is all right; velvet bean crop is as fine as ever seen here; fruit and other crops are doing very well.

NASSAU COUNTY—Sweet potatoes promise a big crop; corn a fair average yield; hay crop will be very heavy; seasons are favorble and everything is prosperous.

OSCEOLA COUNTY—Oranges are splitting quite badly; velvet beans very much injured by worms. We have had two weeks of very nice weather for saving hay.

PASCO COUNTY—As a general thing crops are thriving in all sections of the county; some crops are off a little, but the average will be fairly good. Fruit trees doing fine and fine crops are indicated.

POLK COUNTY—The condition of crops in our county is generally good, and the prospects were never better for a fine yield; a number of crops are the finest ever seen in the county; fruit trees and fruit fine.

ST. JOHNS COUNTY—Crops in this county are the best for several years; fruit trees are doing very well.

SANTA ROSA COUNTY—In most sections of the county crops are good, but there are some locations where they are not doing so well; the average yield will be fair.

SUMTER COUNTY—Condition of crops in this county is very irregular; in some locations they are very good, and in some not very good; the general yield will be about an average Fruit trees and crop both doing well.

SUWANNEE COUNTY—We have an abundance of rain, most too much for the cotton crop, though the crops as a whole is far ahead of last year; other crops are generally good.

TAYLOR COUNTY—There has been too much rain, and if it continues much longer will greatly injure cotton, at present it is good; other crops will average up well.

VOLUSIA COUNTY—All crops grown in this county are doing well, and indicate a good average yield; the fruit trees are growing finely and a fair crop of fruit is in prospect.

WASHINGTON COUNTY—Late cotton is growing rapidly; some rust is seen in early cotton. Rice is extra good, but acreage is small; sugar cane is about the average; field peas and velvet beans are making a fine growth.

CONDITION AND PROSPECTIVE YIELD OF CROPS FOR AUGUST, 1903. AS COMPARED WITH AN AVERAGE.

COUNTIES	Upland Cotton		Sea Island Cotton		Corn		Sugar Cane		Field Peas		Rice	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua...	....	....	70	80	80	90	70	80	80	90	...	....
Baker.....	....	....	50	50	75	75	100	100	50	50	90	75
Bradford..	....	...	85	90	100	100	100	100	90	90	100	100
Brevard...	....	....	....	....	....	....	100	100	....	....	....	....
Calhoun...	....	....	....	..	90	90	95	95	80	80	75	75
Citrus.....	....	....	..	....	100	100	90	100	100	100	....	....
Columbia..	....	....	95	75	95	90	95	100	120	100	100	100
Dade......	....	..	....	....	....	....	....	....	100	100	....	....
DeSoto....	....	....	....	....	100	105	100	100	100	110	100	100
Escambia..	100	90	....		100	100	100	100	90	100	100	100
Franklin...	....	....	....	....	90	90	90	95	90	95	....	....
Gadsden...	80	70	80	90	100	100	100	100	100	125	100	100
Hamilton..	....	....	75	75	60	75	75	75	75	60	75	60
Hillsboro	...	...	100	110	100	110	119	110	90	85	100	100
Holmes....	75	80	80	100	100	100	110	110	100	100	90	100
Jackson...	97	97	95	95	125	125	110	110	110	110	100	100
Lafayette..	....	....	95	90	100	100	100	110	....	....	100	100
Lee........	....	....	....	....	100	100	100	140	100	110	100	115
Leon.......	90	95	....	....	100	95	95	95	100	100	85	90
Levy......	....	....	85	80	100	100	90	90	110	100	100	100
Liberty....	....	....	85	80	100	100	90	85	90	85	95	90
Madison...	75	75	75	75	60	60	100	100	100	100	75	75
Manatee ..	....	....	....	....	....	....	100	150	....	....	100	100
Nassau....	....	....	....	....	90	100	100	100	100	100	....	....
Orange....	....	....	....	....	90	100	90	100	90	90	....	....
Osceola...	....	....	....	....	100	100	110	100	110	110	100	100
Pasco.....	....	...	....	....	100	100	90	90	100	100	100	100
Polk......	....	....	....	....	125	125	100	125	100	100	100	120
St. Johns.	....	....	....	....	120	120	120	120	120	120	190	120
Santa Rosa	85	90	....	....	95	95	100	100	85	90	75	75
Sumter.. .	....	...	90	80	100	100	80	90	75	75	....	....
Suwannee.	....	....	80	80	80	90	70	80	90	70	....	....
Taylor....	....	...	110	100	100	100	100	100	90	90	....	....
Volusia....	....	....	....	....	100	100	150	100	100	100	....	....
Washington	80	80	....	...	105	110	110	110	110	110	100	100
Gen'l av'ge.	85	85	84	86	96	101	98	101	95	96	95	96

CONDITION OF CROPS.—Continued.

Counties.	Sweet Potatoes		Cassava		Peanuts		Broom Corn		Hay		Velvet Beans	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua...	70	80	....	....	80	80	....	....	90	100	100	100
Baker.....	75	80	....		50	50	..	....	....	....	75	75
Bradford..	100	100	....	..	100	100	....	....	100	100	90	90
Brevard...	100	100	....	....	....	....	....	....	....	....	....	....
Calhoun...	90	90	....	....	...		.	....	75	75	....	....
Citrus.....	100	100	....	....	100	100	....	....	100	110	100	100
Columbia..	95	90	....	....	100	95	....	....	100	100	100	100
Dade.....	100	100	....	....	....	....	....	....	....	....	....	....
DeSoto....	100	110	100	100	100	90	....	.	100	110	100	100
Escambia.	100	125	100	100	100	140	....	....	100	100	100	150
Franklin...	90	100	....			....	....	....	100	100	....	....
Gadsden...	100	125	100	100	100	120	....	....	100	120	100	100
Hamilton..	60	75	....	....	60	75	....	....	75	75	60	75
Hillsboro	100	100	....	....	....	....	....	....	100	105	80	75
Holmes....	100	100	....	....	100	100	....	....	100	100	100	110
Jackson...	115	115	....	....	100	100	....	....	125	125	100	100
Lafayette.	100	100	....	....	100	100	...	....	.	....	100	110
Lake......	100	110	....	....	100	100	100	100	100	100	0100	100
Leon.......	95	100	100	115	100	100	....	....	95	95	100	100
Levy......	100	100	100	100	90	90	....	....	100	100	80	80
Liberty....	100	100	....	....	95	95	....	....	....	....	...	....
Madison...	190	100	....	....	110	110	....	....	80	90	.	....
Manatee...	100	100	....	....	....	....	....	....	....	...	200	200
Nassau....	110	[illegible]	....	....	...	..	.	....	100	100		....
Orange....	90	95	100	100	....		....	....	...	....	110	115
Osceola...	100	100	110	120	100	100	....	....	100	100	80	90
Pasco.....	80	80		....	...	....	....	..	50	50	100	100
Polk......	125	125	100	120	110	100	....	....	200	160	100	150
St. Johns.	120	125	100	120	....	....	...	....	100	120	110	120
Santa Rosa	95	95	100	100	100	100	....	....	95	100	100	100
Sumter....	75	85	..	....	80	80	.	....	80	90	75	80
Suwannee.	65	60	60	90	60	80	100	100	100	100	50	90
Taylor....	100	110	....	...	90	90	...	....	....	....	...	....
Volusia....	100	100	125	100	...	...	...	....	100	100	75	100
Washington	100	100	100	100	90	90	....	....	125	125	125	125
Gen'l av'ge	96	98	100	105	92	94	100	100	100	103	97	105

CONDITION OF CROPS—Continued

COUNTIES	Bananas		Pine Apples		Guavas		Orange Trees	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	....	....	....	....	....	....	75	....
Baker	....	....	....	....	....	....	....	....
Bradford	....	....	....	....	....	....	....	....
Brevard	100	200	....	....	100	150	125	150
Calhoun	....	....	....	....	....	....	100	....
Citrus	....	....	....	....	....	....	100	100
Columbia	....	....	....	....	....	....	....	....
Dade	100	100	110	100	100	110	110	100
DeSoto	100	120	100	120	100	110	100	110
Escambia	....	....	....	....	....	....	....	....
Franklin	....	....	....	....	....	....	....	....
Gadsden	....	....	....	....	....	....	....	....
Hamilton	....	....	....	....	....	....	....	....
Hillsborough	....	....	110	95	90	60	120	125
Holmes	....	....	....	....	....	....	....	....
Jackson	....	....	....	....	....	....	....	....
Lafayette	....	....	....	....	....	....	....	....
Lee	100	100	....	....	100	100	120	100
Leon	....	....	....	....	....	....	....	....
Levy	....	....	....	....	....	....	....	....
Liberty	....	....	....	....	....	....	....	....
Madison	....	....	....	....	....	....	....	....
Manatee	100	100	....	....	....	....	90	100
Nassau	....	....	....	....	....	....	100	....
Orange	....	....	....	....	....	....	100	100
Osceola	100	10	80	110	120	90	120	100
Pasco	....	....	....	....	....	....	100	150
Polk	....	....	....	....	....	....	100	125
St. Johns	120	....	....	....	200	....	150	....
Santa Rosa	....	....	....	....	....	....	....	....
Sumter	....	....	....	....	....	....	75	80
Suwannee	....	....	....	....	....	....	....	....
Taylor	....	....	....	....	....	....	....	....
Volusia	....	....	100	100	100	100	125	100
Washington	....	....	....	....	....	....	....	....
General Average	103	105	100	106	101	103	106	111

CONDITION OF CROPS—Continued.

COUNTIES	Lemon Trees		Lime Trees		Grape Fruit Trees	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua						
Baker						
Bradford						
Brevard	100	200			100	125
Calhoun					100	
Citrus					100	100
Columbia						
Dade	100	100	100	100	110	110
DeSoto	100	120	100	110	110	101
Escambia						
Franklin						
Gadsden						
Hamilton						
Hillsborough					120	105
Holmes						
Jackson						
Lafayette						
Lee	120	100	100	100	110	110
Leon						
Levy						
Liberty						
Madison						
Manatee						
Nassau						
Orange	100		100		100	100
Osceola	120	100			120	100
Pasco	100	50			100	100
Polk					100	125
St. Johns					150	
Santa Rosa						—
Sumter	80	75			85	90
Suwannee					—	
Taylor						
Volusia	100				125	125
Washington						
General Average	102	106	100	103	109	107

PART II

FERTILIZERS.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

VALUATIONS.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1902–1903.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen).	15 cents a pound
Potash (as actual potash, K_2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $2.00 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid,	6.39x1.00	$ 6.39
Insoluble Phosphoric Acid,	1.15x .20	.23
Ammonia	4.93x3.00	14.79
Potash	7.11x1.10	7.82
Mixing and bagging		2.00
		$31.23

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of twenty per cent. can be made in above valuations, *i, e.*:

Available Phosphoric Acid	80 cents per unit
Potash (K_2O)	88 cents per unit
Ammonia (or equivelent in nitrogen)	$2 40 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent. and above in ammonia, 2 per cent. or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its Commercial value is as follows:

8 per cent. ammonia @ $3.00	$24.00
2 per cent. available phosphate @ $1.00	2.00
1½ per cent. potash @ $1.10	1.65
	$27.65

The commercial value being in excess of the market value.

There is a quantity of cotton seed meal offered in the State labeled "For feeding purposes only." These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent. potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia	$13.50
1¾ per cent. phosphoric acid	1.75
1½ per cent. potash	1.65
Commercial value	$16.00

These goods are sold at $1.00 to $2.00 per ton less than prime meal. Their relative value is $10.75 less than prime meal. There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of ammonia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis and pay for the actual content of the valuable elements only.

MARKET PRICES.

The following price of manurial chemicals is quoted by reputable dealers and importers in Jacksonville in lots of one to ten tons. The same figures can be made in Pensacola or Tampa, for spot cash f. o. b. cars:

	Less than 5 tons	5 to 10 tons	10 tons.
High Grade Potash 90 to 95 per cent. Sulphate (48 to 50 per cent K2O)	$52 00	$51 00	$50 00
Sulphate Potash, 48 to 55 per cent. Sulphate (25 to 30 per cent K2O)	32 00	31 00	30 00
Muriate Potash 80 to 85 per cent. Muriate (50 to 53 per cent. K2O)	46 00	45 00	44 00
Kainit 12 to 13 per cent. Actnal Potash	15 00	14 50	13 00
Blood and Bone, 6½ per cent. Ammonia	26 50	26 00	25 50
Blood and Bone 7 to 8 per cent. Ammonia	27 50	27 00	26 50
Blood and Bone, 10 per cent. Ammonia	32 00	31 50	31 00
Raw Bone meal, 2 to 4 per cent. Ammonia. 22 to 25 per cent. total Phosphoric Acid	32 00	31 50	31 00
Boneblack, 16 to 18 per cent. available Phosphoric Acid	25 00	24 50	24 00
Acid Phosphate, 14 per cent Available phosphoric Acid	13 00	12 50	12 00
Nitrate Soda, 18 to 19 per cent. Ammonia	47 00	46 50	46 00
Sulphate Ammonia, 24 to 26 per cent. Ammonia	72 00	71 00	70 00
Dried Blood, 17 per cent Ammonia	47 00	46 50	46 00
Ground Castor Pomace 6 to 7 per cent. Ammonia	21 00	20 50	20 00
Canada Hard Wood Ashes, 2 to 8 per cent. K2O (Potash)	15 00	14 50	14 00
Pulverized Tobaco Stems, 5 to 8 per cent. K2O (Potash)	15 00	14 50	14 00
Tobacco Stems (baled) 5 to 8 per cent. K2O (Potash)	16 00	15 50	15 00
Tobacco Dust, High Grade, 5 to 8 per cent. K2O (Potash)	21 00	20 50	20 00
Steamed Bone Flour, 3 to 4 per cent. Ammonia, 25 to 28 per cent Phosphoric Acid	25 00	24 50	24 00
Bright Cotton Seed Meal, 7 to 9 per cent. Ammonia	26 50	26 00	25 50
Dark Cotton Seed Meal, 6 to 8 per cent. Ammonia	22 00	21 50	21 00

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19	...	...
Sulphate of Ammonia	21 to 24	...	...
Dried Blood	12 to 17	...	...
Concentrated Tankage	12 to 15	1 to 2	...
Bone Tankage	6 to 9	10 to 15	...
Dried Fish Scrap	8 to 11	6 to 8	...
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	13 to 17	1½ to 2	...

PHOSPHATE MATERIALS.

	Pounds per Hundred.		
	Ammonia	Available Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphate	...	...	33 to 35
Florida Rock Phosphate	...	...	26 to 32
Florida Super Phosphate	...	14 to 19	1 to 6
Grouned Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissolved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actual Potash	Am'nia	Phosphoric Acid	Lime
Muriate of Potash	50	...	...	...
Sulphate of Potash	48 to 52	...	...	...
Double Sul. of Pot. & Mag.	26 to 30	...	...	...
Kainit	12 to 12½	...	...	...
Sylvinit	16 to 20	...	...	...
Cotton Seed Hull Ashes	15 to 30	...	7 to 9	10
Wood Ashes, unleached	2 to 8	...	1 to 2	30 to 25
Wood Ashes leached	1 to 2	...	1 to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4	...	3½
Cow Manure (fresh)	0.40	0 to 41	0.16	0.31
Horse Manure (fresh)	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)	0.67	1.00	0.23	0.33
Hog Manure (fresh)	0.60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.26	0.70

R. E. ROSE, State Chemist. MARION G. DONK, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.

(Samples taken by purchaser).

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	(Potash K20)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer	255	.....	5 61	2 32	7 93	2 57	10 85	H. R. Harris, Galloway, Fla.
Lime Kiln Ashes	256	19 95	0 55	0 64	1 19	.....	1 76	Schroeder & Auginbaw, Quincy, Fla.
Fertilizer No 1	257	.....	4 66	1 16	5 82	5 69	6 73	W. I. Minor & Son, Coleman, Fla.
Fertilizer No 2	258	.....	4 49	1 24	5 73	6 00	6 23	" " " " "
Fertilizer	259	8 45	6 04	1 54	7 58	2 32	8 76	W. F. Dees, Kathleen, Fla.
Fertilizer	260	11 65	7 68	1 43	9 11	2 15	11 69	C. W. Flanagan, Lakeland, Fla.
Sulphate of Potash	261	0 70	.....	.....	.....	.....	51 16	" " " "
Blood and Bone	262	7 55	8 05	10 25	18 30	4 85	.....	Willson & Toomer, F't'zer Co, Jacksonville
Special Mixture	263	9 00	6 62	1 39	8 01	4 00	10 10	" " " " "
Special Mixture, No. 3	264	5 15	3 99	6 23	10 22	4 00	8 55	" " " " "
Blood and Bone	265	5 10	9 43	7 88	17 31	5 23	.....	" " " " "
Fine Ground Bone	266	7 60	8 59	8 88	17 47	5 94	.....	" " " " "
Florida Special Pineapple Fertilizer	267	4 55	2 76	5 71	8 42	4 19	9 75	" " " " "
Cottonseed Meal	268	6 85	.....	.....	2 29	8 48	1 54	" " " " "
Special Mixture	269	7 90	8 61	0 57	9 18	.....	19 66	" " " " "

NAME OR BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
Blood and Bone, H. G.	270	6 85	5 02	2 44	7 46	8 03	.....	Wilson & Toomer F't'zer Co., Jack'ville, Fla.
Ideal Blood and Bone	271	5 80	8 73	7 26	15 99	5 51	.....	" " " " " "
Fertilizer	272	8 85	10 64	1 42	12 06	1 80	4 65	H. M. Foy, Ellenton, Fla.
Raw Pebble Phosphate	273	.....	.....	.....	29 02	.....	.....	M. Sellers, Wachula, Fla.
Fertilizer	274	2 50	7 27	12 85	20 12	0 51	11 37	Schroeder & Auguinbaw, Quincy, Fla
Ashes	275	.....	.....	.....	.....	.....	1 62	Chas. R. Tysen, Jacksonville, Fla..
Tobacco Dust	276	.....	.....	.....	.....	1 97	1 76	" " " "
Hog Tankage	277	8 70	5 23	2 62	7 85	12 04	.....	Cudahy Packing Co., Kansas City.
Cattle Tankage	278	7 25	7 93	7 35	15 28	6 99	.....	" " " " "
Fertilizer No. 1 (Ashes)	279	4 55	.....	.....	.....	.....	4 39	George Kuhn, Pine Castle, Fla.
" " 2 "	280	4 80	.....	.....	.....	.....	4 28	" " " "
" " 3 "	281	4 00	.....	.....	.....	.....	4 40	" " " "
" " 4 "	282	3 72	.....	.....	.....	.....	4 08	" " " "
" " 5 "	283	7 30	.....	.....	.....	.....	4 32	" " " "
Fertilizer	284	8 90	5 72	0 88	6 60	3 58	12 34	W. A. Hogan, Osona, Fla.
Cottonseed Meal	’85	.....	.....	.....	.....	6 75	.....	R. B. Penton, McDavid, Fla.
Kainit	86	5 15	.....	.....	.....	.....	12 00	Frank Adams, Jasper, Fla.
Fertilizer	37	5 95	5 85	2 06	7 91	0 20	18 00	Stanyarne Burrows, Kissimmee, Fla.
Canada Ashes	38	18 00	.....	.....	.....	.....	3 55	Willson & Toomer Fert Co., Jack'ville, Fla.
Ashes	39	18 25	.....	.....	.....	.....	4 71	" " " " " "
Ashes	290	13 15	.....	.....	.....	.....	4 23	" " " " " "

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid.			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
H. G. Tankage	291	8 35	3 89	2 02	5 91	10 43	.....	Wilson & Toomer Fert. Co., Jacksonville, Fla.
Sulphate of Potash	292	0 06	.....	.....	......	.....	49 64	John J. Lee, Orlando, Fla.
H. W. Ashes	293	0 85	.....	.....	......	.....	3 79	Trugate & Co., Port Ogden, Fla.
Ashes	294	18 40	.....	.....	......	.....	1 50	J. R. Tysen, Jacksonville, Fla.
Cotton Seed Meal	295	....	.....	.....	......	8 34	.....	J. R. Tysen, Jacksonville, Fla.
Sulphate of Potash	296	.....	.....	.....		.....	48 36	J. A. O. Kane, Pebble, Fla.
H. W. Ashes No. 1	297	.....	.....	.....	....	.....	2 58	H. Price Williams, Miami.
H. W Ashes No. 2	298	.....	.....	....	....	.....	3 89	H. Price Williams, Miami.
Fertilizer No. 3	299	.....	2 81	2 63	5 44	8 00	10 74	H. Price Williams, Miami.
Fertilizer No. 4	300	.....	6 24	0 23	6 47	4 02	12 99	H. Price Williams, Miami.
Fertilizer	301	.....	7 74	0 67	8 41	4 71	7 22	R. H. Brown, Youmans, Fla.
Fertilizer	302	.....	7 23	2 28	9 51	4 11	5 48	S. E. Wiggins, Youmans, Fla.
Kainit	303	6 55	..	.	......	.....	13 75	Armour Fertilizer Works. Jacksonville, Fla.
Fertilizer	304	8 20	5 64	2 94	8 58	2 73	12 99	Planters Manufacturing Co. Lake Mary Fla
Fertilizer	305	3 45	5 63	1 02	6 65	2 62	11 62	James Hicks, Lakeland, Fla.
Fertilizer	306	3 80	5 39	1 83	7 22	2 80	10 80	N. C. Peters, Lakeland, Fla.
Fertilizer	307	9 60	6 47	2 02	8 49	4 27	5 57	W. B Hicks, Lakeland, Fla.
Fertilizer	308	5 40	5 43	1 44	6 87	2 48	9 76	J. W. Richards, Gillette, Fla.
Fertilizer	309	6 30	5 20	1 60	6 80	2 60	10 76	Brown Griffin, Lakeland, Fla.
Fertilizer	310	9 58	6 64	1 91	8 55	2 19	11 07	J. E. McGraw, Lakeland, Fla.
Fertilizer	311	8 75	6 94	1 99	8 93	4 21	5 52	W. A. Merryday, & Co., Palatka, Fla.

BUREAU OF FERTILIZERS—Continued

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insolute	Total			
Fertilizer No 1	312	6 90	5 34	2 80	8 14	4 53	5 84	J. R. Davis, Bartow, Fla.
Fertilizer No 2	313	8 10	5 63	3 32	8 95	4 70	6 46	J. R. Davis, Bartow, Fla.
Fertilizer	314	6 65	10 79	0 35	11 14	.....	21 44	[illegible]. E. Berry, Manchura, Fla.
Delray Special	315	10 95	3 28	0 49	3 77	5 04	2 41	Armour Fertilizer Works Jacksonville, Fla.
Special Mixture No 1	319	9 55	6 93	2 99	9 92	3 50	6 54	Z. C. Chamblis, Ocala, Fla.
Special Mixture No 2	320	7 85	6 50	1 64	8 14	4 28	6 53	Z. C. Chamblis, Ocala, Fla.
Ground Bone	322	3 70	12 87	12 65	25 52	3 04	.....	A. L. Wilson, Quincy, Fla.
Fertilizer No 1	323	.....	7 82	1 31	9 13	4 07	7 61	Tampa Fertilizer Co., Tampa, Fla.
Fertilizer No 2	324	.....	6 15	2 25	8 40	2 40	6 77	Tampa Fertilizer Co., Tampa, Fla.
Fertilizer No 3	325	.....	8 58	1 71	10 29	1 98	15 90	Tampa Fertilizer Co., Tampa, Fla.
Blood, Bone and Potash	326	.....	7 77	1 96	4 73	6 63	10 38	W. Fredrickson, Jensen, Fla.
Cotton Seed Meal	327	.....	.....	.....	.....	7 60	.....	E. H. Slappy, Havanah, Fla.
Sulphate of Potash B	328	1 80	.....	.....	.....	.....	48 44	C. H. Dorman, Houston, Fla.
Fertilizer A	329	7 95	7 60	3 66	11 26	5 30	6 97	C. H. Dorman, Houston, Fla.
Fertilizer No 3	330	11 30	7 67	1 41	9 08	4 34	5 36	W. A. Merryday & Co., Palatka, Fla.
Fertilizer No 4	331	11 00	6 22	1 71	7 93	4 44	3 17	W. A. Merryday & Co., Palatka, Fla.
Cremo Brand, Cotton Seed Meal	332	.....	.....	.....	.....	4 32	.....	S. L. Ditto and Co., Jacksonville, Fla.
H. G. Blood and Bone	333	.....	5 86	4 46	10 32	10 43	.....	Cudahy Packing Co., Jacksonville, Fla.
Fertilizer	334	.....	8 23	1 20	9 43	2 55	1 80	A. L. Wilson & Co., Quincy, Fla.
Fertilizer	335	3 90	5 54	1 37	6 91	2 65	10 31	A. V. Water, Gallaway, Fla.
Fertilizer	336	7 80	6 37	1 97	8 34	4 94	8 78	C. W. Dallom, Ellenton, Fla.

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	(Potash K20)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer	337	6 00	2 39	1 86	4 16	8 41	9 99	C. F. Way, Jensen, Fla.
Fertilizer.	338	15 75	6 56	0 66	7 22	2 46	9 36	S. L. Langford, Hyman, Fla.
H. G. Blood and Bone	339	6 00	3 64	1 64	5 28	10 87	......	John Donk, Tallahassee, Fla.
Kainit	340	.....	.....	.....	......	.....	12 56	W. M. Girardeau, Monticello, Fla.
Fruit and Vine Fertilizer	341	14 35	7 58	1 83	9 41	2 55	2 31	Henry Varnes, Johnstown, Fla.
Cave Earth	342	.....	.....	.....	4 60	11 70	0 90	W. D Hendrickson, Palm Beach Fla.
Fertilizer	343	10 35	9 26	1 72	10 98	1 79	14 22	J. D. Rushing, Tampa, Fla.
Fertilizer No. 1	344	10 55	8 76	0 00	8 76	6 24	9 64	A. C. Haynes, DeLand, Fla.
Nitrate of Soda No 2	345	1 60	.....	.....	......	18 69	......	A C. Haynes, DeLand, Fla.
Fertilizer No. 3	346	6 25	4 33	5 72	10 05	8 87	...	A. C. Haynes, DeLand. Fla
Indian Mound Earth	347	.....	3 26	4 56	7 82	.....	......	H. W. Fuller, Braidentown, Fla.
Fertilizer	348	6 60	6 95	1 53	8 48	4 15	9 45	W. A. Bispham, Ellenton, Fla.
Fertilizer	349	.....	15 63	1 60	17 23	4 19	1 80	O. P. Shepherd Winter Park, Fla.
Fertilizer	350	.....	10 77	3 31	14 08	3 92	2 95	R. L. Cowart, Ona, Fla.
Fertilizer No. 1	351	.....	6 85	3 67	10 52	4 84	4 63	W W. Beney, Stuart, Fla.
Fertilizer (Leached)	352	.....	7 05	3 64	10 69	4 34	4 93	W. W. Beney, Stuart, Fla.
Fertilizer	353	.....	6 60	1 81	8 41	3 42	5 45	C. M. Smith, Oxford, Fla.
Bone Black	354	.....	2 89	31 85	34 74	....	......	John Frey, Bona Venture, Fla.
Pulverized Steamed Bone	356	7 75	13 66	10 11	23 77	3 64	......	H. M. Sample, Ft. Pierce. Fla.
Fertilizer	357	3.60	8 20	4 33	12 53	4 65	6 88	James Anderson Ft Pierce, Fla.
Fertilizer	358	.....	7 53	1 10	8 63	1 83	6 59	R. P. Bryan, Colman, Fla.
L. G. Blood and Bone	359	.....	7 45	3 53	10 98	6 72	......	Cudady Packing Co., Jacksonville. Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Inso'uble	Total			
Fertilizer	360	....	8.22	4.54	12.76	1 97	10.70	J. E. Crow, Ossining, N. Y.
Fertilizer	361	12.60	6.43	2.36	8 79	2.34	8.74	Wm. E. Earle, angarine, Fla.
Canada H. W. Ashes	362	....	....	....	....	....	4 94	L. D. Klutes St. Petersburg, Fla.
Special Mixture	363	5.15	5.91	2 60	8.51	6.17	8.37	C. F. Olmstead, Ft. Pierce Fla.
Fertilizer No. 1	364	....	3.19	2 07	5.26	....	13 68	Schroeder & Auginbaw, Quincy, Fla.
Fertilizer No. 2	365	....	5.94	7.60	13 54	....	13.54	" " " "
Fertilizer——	366	....	[illegible].47	1.69	5.16	.	8.60	" " " "
Sulphate of Ammonia	367	....	....	....	....	23 34	....	F. D. Waite, Palmetto, Fla.
Nitrate of Soda	368	....	....	....	....	17.70	....	" " "
Dissolved Bone	369	....	19.77	0.25	20.02	....	....	" " "
Acid Phosphate	370	....	14.44	5.56	20 00	....	....	" " "
Special Mixture	371	....	8 30	2.35	10 65	4.12	14.03	" " "
Nitrate of Potash	372	....	....	....	....	12.09	41.40	" " "
Sulphate of Potash	373	....	....	....	....	....	49.40	" " "
Special Mixture No. 2	374	13.75	7.85	0.10	7 95	3.85	11.16	" " "
Blood and Bone	375	....	3.23	1.97	5.20	10.05	....	A. N. Hoofnagh, Ft. Pierce, Fla.
L. G. Sulphate of Potash	376	....	....	....	....	....	26 70	" " "
Dark Cotton Seed Meal	377	....	....	....	1.86	4.34	1.47	Fla. Cotton Oil Co., Jacksonville, Fla.
Tobacco Dust	378	....	....	....	....	2 68	9.43	James Holmes, Jensen, Fla.

NAME OR BRAND.	Laboratory No.	Moisture.	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Availab'e	Insoluble	Total			
Tobacco Dust	379	....	....	....	....	0.93	3.37	A. B. Mayer, Neptune Fla.
Special Mixture	380	....	3.72	2.60	6.32	3.61	4.95	James Andrews Ft. Pierce Fla.
Blood and Bone	381	....	3.44	1.58	5.02	10.51	....	Dr. Henry Ehrlick, Ft. Pierce, Fla.
Blood and Bone No. 2	382	....	2.83	3.89	5.72	8.98	....	" " "
Potash (L. G. Sulphate)	383	....	....	....	....	....	25.74	" " "
Potash No. 2	384	....	....	....	....	....	25.90	" " "
H. G Sulphate of Potash	385	....	....	....	....	....	49.24	Mrs. D. Justice, Ft. Pierce, Fla.
Ground Castor Pomace	386	....	....	....	....	6.22	0.47	" " "
Cotton Seed Meal	387	....	....	....	2.29	7.08	0.80	" " "
Fertilizer	388	....	8.02	1.10	9.12	3.85	9.97	C F. Wall, Seaside, Fla,
Dark Cotton Seed Meal	389	....	....	....	1.87	4.53	1.48	Florida Cotton Oil Co., Jacksonville, Fla.
Pineapple, Formula A	390	....	....	....	1.71	4.77	1.99	R. L Goodwin, Ft. Pierce, Fla.
Pineapple, Formula B	391	....	....	....	1.60	4.55	6.23	" " " "
Fertilizer	392	....	4.63	3.71	8.38	4.55	7.90	Jas. E. Andrews, Tibbals, Fla.
Fertilizer No. 1	393	....	8.07	0.79	8.86	3.00	4.98	H. Crutcher Jacksonville, Fla.
Mixed Fertilizer No 2	394	....	8.49	0.86	9.35	3.67	5.02	" " " "
Mixed Fertilizer No. 3	395	....	5.27	0.78	6.05	4.25	13.78	" " " "
Mixed Fertilizer No. 4	396	....	6.75	1.33	8.08	4.04	5.19	" " " "

NAME OR BRAND.	Laboratory No.	Moisture.	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT
			Available	Insoluble	Total			
Mixed Fertilizer No. 5	397	.....	10.17	1.55	11.75	2.26	2.35	H. Crutcher, Jacksonville, Fla.
Mixed Fertilizer No. 6	398	.....	9.28	1.02	10.30	4.41	3.55	" " " "
Mixed Fertilizer No. 7	399	.....	10.16	0.97	11.13	1.13	1.41	" " " "
Cotton Seed Meal	400	.....	.....	.....	2.36	7.27	1.71	W. A. Bours & Co., Jacksonville, Fla.
Mixed Fertilizer No. 9	401	14.10	5.61	1.14	6.75	2.55	10.88	H. Crutcher, Jacksonville, Fla.
Mixed Fertilizer No. 8	402	11.90	8.28	1.41	9.67	3.06	10.75	" " " "
Loggerhead Sponge No. 1	403	.....	.....	.....	.....	1.80	......	C. L. Huddleston. Miami. Fla.
Loggerhead Sponge No. 2	404	.....	.....	.....	.....	1.60	......	" " " "

For values see heading "Bureau of Fertilizers."

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample" sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on following pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a "Special Sample."

R. E. ROSE, STATE CHEMIST, ANALYSIS OF FERTILIZERS, 1902, MARION G. DONK, ASSISTANT CHEMIST.

Samples taken by State Chemist under Section 1, Act approved May 22 1901.

NAME OF BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Gem Fruit and Vine.....	203	Guarant'd Analysis.	5	6	1	......	2 50	10	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	8 75	7 69	0 95	8 64	3 13	11 20	
Cotton Seed Meal.......	204	Guarant'd Analysis.	......	......	......	......	8 00	......	Florida Cotton Oil Co., Jacksonville.
		Official Analysis....	......	......	......	......	8 15	......	
Cotton Seed Meal.......		Guarant'd Analysis.	......	......	......	......	......	......	**E. O. Painter Fertilizer Co., Jacksonville.**
	206	Official Analysis....	......	......	......	......	8 60	......	
Cotton Seed Meal.......		Guarant'd Analysis.	......	......	......	......	7 50	......	American Cotton Oil Co. Americus, Ga.
	205	Official Analysis....	......	......	......	......	8 70	......	
Cotton Seed Meal.......		Guarant'd Analysis.	......	......	......	......	8 00	......	Florida Cotton Oil Co., Jacksonville.
	207	Official Analysis....	......	......	......	......	7 31	......	

ANALYSIS OF FERTILIZERS—Continued.

Dark Cotton Seed Meal.	208	Guarant'd Analysis.	......	......	......	......	5 00	......	Florida Cotton Oil Co., Jacksonville.
		Official Analysis....	......	......	......	......	4 86	......	
Castor Pomace..........	209	Guarant'd Analysis.	......	......	......	.....	......	......	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......	...	......	......	7 00	......	
Cuke Special	210	Guarant'd Analysis.	7 00	5 00	2 00	......	4 00	8 00	Standard Fert. Works, Gainesville, Fla.
		Official Analysis....	5 10	3 53	1 81	5 34	4 23	8 16	
Corn and Cotton Special Fertilizer..............	211	Guarant'd Analysis.	10 00	7 00	3 00	......	1 00	5 00	Standard Fert. Works, Gainesville, Fla.
		Official Analysis....	4 95	7 46	4 40	11 86	1 98	4 11	
Tree Grower............	212	Guarant'd Analysis.	7 00	7 00	2 00	......	5 00	5 00	Standard Fert. Works, Gainesville, Fla.
		Official Analysis....	5 25	3 93	3 39	7 32	6 00	4 70	
No. 1, Peruvian & Fish Guano Mixture.......	213	Guarant'd Analysis.	10 00	5 00	1 00	......	4 50	5 00	Florida Fertilizer Man'f'g Co., Gainesville, Fla.
		Official Analysis....	8 85	5 00	2 23	7 23	4 94	5 97	
Strawberry Fruiter.....	214	Guarant'd Analysis.	10 00	5 00	2 00	......	2 00	10 00	Florida Fertilizer Man'f'g Co., Gainesville, Fla.
		Official Analysis....	8 80	6 91	1 68	8 50	3 16	8 06	
No. 3, Blood, Bone and Potash................	215	Guarant'd Analysis.	10 00	4 00	2 00	......	4 00	4 00	Florida Fertilizer Man'f'g Co., Gainesville, Fla.
		Official Analysis....	9 25	5 66	1 72	7 38	3 98	5 11	
Goulding's Meal Mixture..................	217	Guarant'd Analysis.	12 00	9 00	1 00	......	1 00	1 00	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 30	11 39	0 60	12 49	1 29	1 55	
Export Super Phosphate	218	Guarant'd Analysis.	12 00	18 00	1 00	......	......	......	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	10 70	19 33	0 44	19 71	......	......	

ANALYSIS OF FERTILIZERS—Continued.

Cotton Seed Meal.......	219	Guarant'd Analysis.	......	......	....	......	8 00	......	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	......	......	......	......	8 98	......	
Bone Compound........	223	Guarant'd Analysis.	12 00	8 75	1 00	......	2 00	1 50	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis...	11 25	8 27	5 86	14 13	2 26	1 57	
Cotton Seed Meal.......	224	Guarant'd Analysis.	......	......	......	.....	8 24	......	Georgia Cotton Oil Co., Albany, Ga.
		Official Analysis....	......	......	......	....	7 76	......	
Cotton Seed Meal.......	225	Guarant'd Analysis.	.....	......	......	......	8 24	.....	Georgia Cotton Oil Co., Albany, Ga.
		Official Analysis....	......	......	......	......	7 93	.....	
Acid Phosphate.........	226	Guarant'd Analysis.	14 00	12 00	1 10	......	......	......	Mutual Fertilizer Co., Savannah, Ga.
		Official Analysis....	13 90	13 54	1 16	14 71	... ..	....	
Cumberland Guano.....	227	Guarant'd Analysis.	14 00	8 00	1 00	......	2 00	2 00	Mutual Fertilizer Co, Savannah, Ga.
		Official Analysis....	13 15	9 00	1 14	10 14	2 21	1 25	
Desolved Bone Superphosphate............	228	Guarant'd Analysis.	10 00	8 00	1 00	.....	2 00	2 00	Cumberland Bone Phosphate Co., Portland, Me
		Official Analysis....	18 65	9 69	2 10	11 79	2 34	1 34	
Southern State Special Veg. Guano..........	229	Guarant'd Analysis.	8 00	6 00	1 00	......	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 70	6 93	0 84	7 77	4 11	6 41	
Alabama Fertilizer.....	230	Guarant'd Analysis.	......	8 50	2 00	......	2 18	1 50	Va.-Car. Chem. Co., Charleston S. C.
		Official Analysis....	10 61	8 97	2 80	11 77	2 39	1 48	
Fruit and Vine..........	231	Guarant'd Analysis.	8 09	6 00	1 00	......	2 50	10 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	8 65	7 27	0 81	8 08	2 63	10 71	

Tip Top Tomato........	232	Guarant'd Analysis.	8 00	7 00	1 00	......	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	10 90	8 07	1 12	9 19	4 74	4 18	
Champion Compound...	233	Guarant'd Analysis.	......	8 00	1 00	......	1 00	3 00	Va.-Car. Chem Co., Charleston, S. C.
		Official Analysis....	14 10	9 07	1 80	10 77	0 98	4 35	
Georgia State Grange...	234	Guarant'd Analysis.	......	8 00	2 00	......	2 00	2 00	Va.-Car Chem. Co., Savannah, Ga.
		Official Analysis....	13 43	8 77	1 49	10 16	2 57	3 42	
Georgia State Standard.	235	Guarant'd Analysis.	..	8 00	2 00	......	2 00	2 00	Va.-Car. Chem. Co., Charleston, S. C.
		Official Analysis....	13 15	8 07	4 43	12 50	1 62	1 89	
Fertilizer No. 1.........	236	Guarant'd Analysis.	10 00	5 00	2 00	......	5 00	4 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	9 25	7 08	5 55	12 63	4 91	3 73	
Extra Fruit and Vine. .	237	Guarant'd Analysis.	10 00	6 00	1 00	......	2 00	14 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	9 15	6 58	1 62	8 20	2 27	13 88	
Carey's Special for Fruit	238	Guarant'd Analysis.	10 00	6 00	1 00	......	4 00	12 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	10 05	5 98	1 18	7 16	3 90	12 04	
Vegetable Fertilizer....	239	Guarant'd Analysis.	10 00	6 00	2 00	......	5 00	6 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	10 90	5 99	1 46	7 45	4 85	5 96	
Extra Fruit and Vine (Bone)................	240	Guarant'd Analysis.	10 00	6 00	1 00	......	2 00	14 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	9 60	7 16	1 63	8 79	2 38	13 90	
No. 4 Fertilizer.........	241	Guarant'd Analysis.	10 00	6 00	2 00	......	3 00	10 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	8 08	6 00	2 50	8 50	3 16	9 73	

ANALYSIS OF FERTILIZERS—Continued.

Carey's Special for Fruit (Bone)................	242	Guarant'd Analysis.	10 00	6 00	1 00	......	4 00	12 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	8 90	7 30	1 44	8 64	3 98	12 83	
Fertilizer No. 2.........	243	Guarant'd Analysis.	10 00	6 00	2 00	......	5 00	10 00	So. Fert. Co., Orlando, Fla.
		Official Analysis ...	8 95	6 35	1 96	8 31	4 86	10 10	
Orange Tree Fertilizer..	244	Guarant'd Analysis.	8 00	6 00	1 00	......	2 00	10 00	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	9 50	7 22	1 91	9 13	1 97	9 23	
Ashes..................	245	Guarant'd Analysis.	......	......	......	......	......	5 50	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	4 70	......	......	......	......	3 75	
Lampat's Formula......	246	Guarant'd Analysis.	12 00	2 00	1 50	......	......	10 00	Schroeder & Auguinbau, Quincy, Fla.
		Official Analysis....	3 70	5 11	9 47	14 58	......	12 14	
Lampat's Formula No. 1	247	Guarant'd Analysis.	4 00	3 00	1 00	......	......	12 00	Schroeder & Auguinbau, Quincy, Fla.
		Official Analysis....	5 00	2 34	2 44	4 78	......	12 85	
Ashes..................	248	Guarant'd Analysis.	15 00	......	......	......	......	4 00	Willson & Toomer Fert. Co.. Jacksonville.
		Official Analysis....	18 60	......	......	......	......	3 54	
Peruvian Guano........	249	Guarant'd Analysis.	15 00	8 00	18 00	......	2 50	1 00	Willson & Toomer, Fert. Co., Jacksonville.
		Official Analysis....	12 65	7 97	24 97	32 94	2 22	0 89	
Blood and Bone Fertilizer..................	250	Guarant'd Analysis.	4 00	4 00	1 00	......	4 00	10 00	Barney Hart, Jacksonville, Fla.
		Official Analysis....	7 60	5 88	3 92	9 80	1 49	6 35	
L. G. Sulphate of Potash	251	Guarant'd Analysis.	......	......	......	......	......	26 00	Barney Hart, Jacksonville, Fla.
		Official Analysis....	......	......	......	......	......	27 82	

ANALYSIS OF FERTILIZERS—Continued.

Nitrate of Soda........	252	Guarant'd Analysis.	......	......	......	......	......	17 00	E. O. Painter Fertilizer
		Official Analysis....	3 05	......	......	......	......	17 88	Co., Jacksonville.
Canada H. W. Ashes.,..	253	Guarant'd Analysis.	......	......	......	......	......	4 00	E. O. Painter Fertilizer
		Official Analysis....	......	......	......	......	......	3 93	Co., Jacksonville.
H. G. Sulphate of Potash	254	Guarant'd Analysis.	......	......	......	......	......	49 00	E. O. Painter Fertilizer
		Official Analysis....	....	......	......	....	......	48 72	Co., Jacksonville.
Double Manure Salt.....	255	Guarant'd Analysis.	......	......	......	......	......	26 00	E. O. Painter Fertilizer
		Official Analysis....	......	......	......	......	......	26 60	Co., Jacksonville.
Blood, Bone and Potash	256	Guarant'd Analysis.	......	......	......	......	4 50	6 00	E. O. Painter Fertilizer
		Official Analysis....	5 45	8 68	2 57	11 25	4 98	6 75	Co., Jacksonville.
Gem Potato Manure....	257	Guarant'd Analysis.	10 00	4 00	1 00	......	4 00	11 00	E. O. Painter Fertilizer
		Official Analysis....	6 10	6 48	0 95	7 43	4 33	10 81	Co., Jacksonville.
Gem Strawberry Special	258	Guarant'd Analysis.	8 00	6 00	2 00	......	4 00	10 00	E. O. Painter Fertilizer
		Official Analysis....	5 60	5 62	1 03	6 65	5 54	8 03	Co., Jacksonville.
H. G. Blood, Bone and Potash...............	259	Guarant'd Analysis.	......	......	......	......	7 00	10 00	E. O. Painter Fertilizer
		Official Analysis....	5 55	2 68	2 46	5 14	7 06	11 19	Co., Jacksonville.
Gem Orange Tree.......	260	Guarant'd Analysis.	8 00	5 00	3 00	......	4 00	6 00	E. O. Painter Fertilizer
		Official Analysis....	6 00	4 34	3 00	7 34	5 01	6 33	Co., Jacksonville.
Gem Vegetable Manure.	261	Guarant'd Analysis.	8 00	5 00	3 00	......	4 00	6 00	E. O. Painter Fertilizer
		Official Analysis....	5 60	4 77	1 76	6 53	5 06	6 83	Co., Jacksonville.

Armour's Celery Grower	262	Guarant'd Analysis.	......	5 00	1 00	......	8 00	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	5 70	4 71	2 34	7 05	8 40	8 11	
Armour's Lettuce Special..................	263	Guarant'd Analysis.	10 00	8 00	2 00	......	7 00	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 95	5 72	0 99	6 71	6 78	5 45	
Armour's Strawberry Fruiter................	264	Guarant'd Analysis.	10 00	5 00	2 00	......	2 00	10 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	9 65	6 49	2 40	8 89	2 50	10 90	
Armour's Orange Tree Manure...............	265	Guarant'd Analysis.	10 00	8 00	2 00	......	3 50	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	8 05	7 46	3 13	10 59	3 80	4 83	
Armour's Fruit and Vine	266	Guarant'd Analysis.	10 00	6 00	1 00	......	2 50	11 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	8 80	5 96	1 75	7 71	2 72	10 08	
Armour's Golden Fruiter	267	Guarant'd Analysis.	10 00	6 00	1 00	......	3 50	6 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 75	7 43	2 27	9 70	3 52	7 04	
Armour's Canada Ashes	268	Guarant'd Analysis.	15 00	......	......	......	......	5 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	......	......	......	......	......	3 19	
Swift Sure Fertilizer....	269	Guarant'd Analysis.	10 00	7 00	3 00	......	2 50	10 00	M. L. Shoemaker, Philadelphia, Pa.
		Official Analysis....	8 30	8 90	3 54	12 44	2 57	10 10	
Baugh's H. G. Vegetable	273	Guarant'd Analysis.	......	6 00	2 00	......	5 00	7 00	Baugh & Sons, Philadelphia, Pa.
		Official Analysis....	13 45	7 37	1 65	9 02	4 55	7 08	
Armour's Cotton Boll..	274	Guarant'd Analysis.	10 00	8 00	1 00	......	2 00	2 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	10 85	8 11	2 53	10 64	1 95	2 99	

Standard Ammoniated Super-Phosphate	275	Guarant'd Analysis.	......	8 00	......	......	2 00	2 00	Virginia Car. Chem. Co., Charleston, S. C.
		Official Analysis....	13 00	9 38	4 03	13 41	2 05	1 71	
Bone Compound	276	Guarant'd Analysis.	16 00	8 75	1 00	......	2 00	1 50	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 65	8 94	6 10	15 04	1 63	1 60	
Four per cent. Potash, Acid Phosphate	277	Guarant'd Analysis.	......	8 00	1 00	......	......	4 00	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	14 05	12 84	1 91	14 75	.....	2 41	
Acid Phosphate	278	Guarant'd Analysis.	......	12 00	3 00	...	....	......	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 05	15 37	2 09	17 46	......	......	
Cotton Seed Meal	279	Guarant'd Analysis.	......	......	......	2 50	8 00	1 50	Southern Cotton Oil Company.
		Official Analysis....	......	......	......	2 06	8 24	1 70	
Dark Cotton Seed Meal	280	Guarant'd Analysis.	......	......	......	....	5 00	.....	Florida Cotton Oil Co, Jacksonville, Fla.
		Official Analysis....	.....	.....	......	......	4 28	.....	
Cotton Seed Meal	281	Guarant'd Analysis.	7 65	......	......	2 40	8 00	1 76	Lathrop C. C. Co., Hawkinsville, Ga.
		Official Analysis....	......		......	......	8 26	......	
Cotton Seed Meal	282	Guarant'd Analysis.	6 50	......	......	2 00	8 00	1 00	H. H. Smith, Atlanta, Ga.
		Official Analysis....	.....	...	......	.....	8 16	......	
Tobacco Dust	283	Guarant'd Analysis.	......	......	......	.....	1 50	2 00	Eastern Tobacco Co., Richmond, Va.
		Official Analysis....	......	....	......	......	1 22	3 73	
Kentucky Brand H. G. Tobacco Dust	284	Guarant'd Analysis.	10 00	......	......	......	3 50	5 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	......	......	......	..	2 79	9 19	

Castor Pomace........	285	Guarant'd Analysis.	10 00	.....	.....	1 50	6 00	1 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....		......	......	......	5 88	....	
Nitrate of Soda.........	286	Guarant'd Analysis.	2 00	......	......	......	17 00	......	J. R. Tysen, Jacksonville.
		Official Analysis....	......	......	......	......	17 26	....	
H. W. Ashes...........	287	Guarant'd Analysis.	......	......	......	......	.....	2 50	J. R. Tysen, Jacksonville.
		Official Analysis....	....	......	....	.....	......	3 30	
H. G. Muriate of Potash	288	Guarant'd Analysis.	.....	.....	.....	......	......	50 00	Armour's Fert. Works, Jacksonville
		Official Analysis....	.....	.....	......	......	.....	47 28	
H. G. Sulphate of Potash	289	Guarant'd Analysis.	5 00	......	......	.....	......	49 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......	......	......	......	......	50 20	
Low Grade Sulphate of Potash...............	290	Guarant'd Analysis.	5 00	......	......	......	.....	26 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......	....	......	......	......	26 50	
Acid Phosphate.........	291	Guarant'd Analysis.	......	14 00	......	....	......	......	Little Brothers, Jacksonville
		Official Analysis....	.....	17 00	1 76	18 76	..	.....	
H. G. Blood and Bone.	292	Guarant'd Analysis.	8 00	.....	.....	7 00	10 00	......	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......	3 36	2 39	5 75	10 10	......	
Blood and Bone.........	293	Guarant'd Analysis.	9 00	6 00	8 00	......	6 50	......	Cudaby Packing Co., S. Omaha, Neb.
		Official Analysis....	......	6 62	7 26	13 88	7 23	......	
Mapes Fruit and Vine Manure..............	294	Guarant'd Analysis.	10 00	5 00	2 00	......	2 00	10 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	9 65	5 91	2 90	8 81	2 36	10 79	

ANALYSIS OF FERTILIZERS—Continued.

Mapes Pineapple Mannre	295	Guarant'd Analysis.	10 00	4 00	2 00	......	5 00	1 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	14 45	2 87	3 68	6 50	4 99	6 25	
Mapes Orange Tree Manure..................	296	Guarant'd Analysis.	12 00	6 00	2 00		4 00	3 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	13 00	5 36	5 79	11 15	4 05	3 37	
Mapes Vegetable Manure	297	Guarant'd Analysis.	12 00	6 00	2 00	......	5 00	4 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	15 40	5 61	4 38	10 09	5 03	5 11	
Armour's Fruit and Vine	298	Guarant'd Analysis.	10 00	6 00	1 00	.....	2 50	11 00	Armour's Fert. works, Jacksonville.
		Official Analysis....	9 85	8 38	1 94	10 32	2 71	9 36	
Armour's Practical Pineapple................	299	Guarant'd Analysis.	10 00	7 00	3 00	.....	3 50	10 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	7 05	10 62	1 38	12 00	4 02	9 91	
Armou's Practical Trucker..............	300	Guarant'd Analysis.	10 00	6 00	2 00	.....	3 00	10 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	8 15	6 50	4 50	11 00	3 57	8 72	
Armour's Orange Tree..	301	Guarant'd Analysis.	10 00	8 00	2 00	.....	3 50	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 25	6 99	5 89	12 88	3 84	4 49	
Armour's Vegetable.....	302	Guarant'd Analysis.	10 00	7 00	2 00	......	4 00	6 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	10 85	9 03	2 77	11 80	4 46	6 66	
Armour's Fruit and Root Crop Special..........	303	Guarant'd Analysis.	10 00	8 00	1 00		2 00	5 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	10 10	8 42	1 76	10 18	2 17	7 29	
Peruvian Guano........	304	Guarant'd Analysis.	.....	.....	......	20 00	3 50	4 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	4 90	13 08	10 32	23 40	3 85	4 54	

ANALYSIS OF FERTILIZERS—Continued.

Florida Special Pineapple Fertilizer........	305	Guarant'd Analysis.	6 00	4 00	4 00	......	4 00	7 00	Willson & Toomer Fert. Co , Jacksonville.
		Official Analysis....	4 60	4 74	5 20	9 94	4 01	5 89	
Ideal Fruit and Vine...	306	Guarant'd Analysis.	10 00	6 00	......	..	3 00	10 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	8 00	7 56	0 94	8 50	3 22	10 67	
Peruvian Fruit and Vine Manure...............	307	Guarant'd Analysis.	10 00	6 00	7 00		3 00	10 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	10 65	6 84	2 44	9 28	5 10	12 35	
Special Formula for Corn	308	Guarant'd Analysis.	10 00	8 00	1 00		2 50	3 50	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	11 90	7 81	1 27	9 08	2 25	5 25	
Ideal Fertilizer..........	309	Guarant'd Analysis.	8 00	5 00	1 00	......	4 00	6 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	9 50	6 31	1 30	7 61	4 00	6 99	
Special Mixture No. 1...	310	Guarant'd Analysis.	8 00	6 00	1 00	.....	5 00	5 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	7 90	6 26	1 61	7 87	5 06	5 70	

PART III

MISCELLANEOUS

SYRUP MAKING ON SMALL APPARATUS WITH KETTLES OR EVAPORATORS.

BY R. E. ROSE, STATE CHEMIST.

Numerous letters of inquiry have recently been received by this division of the State Agricultural Department, for information and directions for "syrup making" on a small scale. It being impractical to answer all these letters individually, and intellegently, a short description of the apparatus required, and the methods most generally used have been compiled.

While these general rules and directions are given, there are many "kinks" and conditions arising that require experience and skill to succeed in making a really good quality of syrup—or sugar. The art of sugar boiling is like all other arts, and requires practice and skill to become an adept. While it is possible to tell "why" certain results should follow certain processes, one can only learn "how" by practice. Numerous failures may be expected—some of the most skillful sugar boilers are unable to tell "why," but they do know "how" to produce the best results. There are numbers of chemists who, while they know "why" certain results are to be expected from given conditionsand process, have not the skill required to boil syrup, or sugar successfully. "Syrup boiling" in all sugar making countries is a distinct art, trade, or profession. Skillful sugar boilers frequently being paid as much, or more than either the superintendent, manager, chemist, or engineer of a sugar factory.

Material—the cane for sugar making should be fairly matured; two-thirds or three-fourths of the stalk should have matured, and dropped its leaves; cane is mature up to the last green leaf. Those joints that still have growing leaves, or blades are not mature. In cutting cane for syrup making, a part of the immature stalk—several joints above the ripe or "red" joints—should be sent to the mill. These immature joints contain a larger proportion of "glucose"—immature sugar—than the ripe joints; the ripe joints have but little "glucose" in them; in perfectly matured cane there is practically no "glucose." In syrup making it is absolutely necessary to have a considerable quantity of "glucose" to prevent the sugar or "sucrose" from crystalizing, when the material is evaporated to sufficient density to make a desirable syrup.

The "glucose" content varies in cane of different conditions of maturity; it also is largely increased by fermentation. also by long boiling; hence it is frequently the practice to allow cane of high sugar content—very ripe cane, liable to crystalize into sugar—to lay after cutting, for some time in the sun, to induce fermenting, a practice that would ruin a "sugar maker," but is allowable in "syrup making." The object of the syrup maker is to secure a thick, clear material that will not granulate or "sugar off;" this he can only do by having a quality of "glucose" in his solution of "sugar."

Quite the opposite practice is required for sugar making; in this case we want ripe cane with as much "sucrose" and as little "glucose" as possible; we want fresh cut cane and no ferment to secure the largest amount of crystals, and as little molasses ar possible.

Lime.—The universal agent used for clarifying or defficating cane juice is *quick lime*—unslacked, freshly burned lime, properly water slacked. The lime is best prepared by slacking fifty pounds of such lime in a barrel, gradually adding water till the lime is slacked, and the violent heat has subsided; then add water making up the solution to fifty gallons. Each gallon of "lime wash" should contain one pound of lime, or four ounces to each quart. This should be strained through a sack to remove coarse particles, and kept in a covered barrel or tub. Before dipping out a portion for use, the whole should be well stirred, as the lime settles and the top layer has not a sufficient quantity of lime (four ounces to the quart), if this stirring is not done each time the necessary quantity is taken out for use.

To each one hundred gallons of raw, strained juice, add one quart of the lime wash, the object being to use about four ounces of lime to each one hundred gallons of normal juice. Experience will soon teach when too much or to little lime is used. Cane juice from the mill is always acid, frequently very much so, particularly when using frosted or fermented cane. The object of lime is to *correct* this acidity, but not to destroy it completely. In syrup making the juice should remain slightly acid, changing blue litmus paper to a faint pink color. Should the blue litmus remain blue, or be very slightly changed, more raw juice should be added till a decided pink color be shown by the test paper.

The lime should be added to the cold raw juice either in a tank, or the clarifying compartment of the evaporator. The object of the lime is to correct too much acidity, to coagulate albumens and gums, causing the light impurities to float as skum, the heavier ones to sink as mud, in the clarifying or settling tank.

A perforated metal strainer or seive should be used under the mill spout; over the juice barrel a strainer of bagging should be placed; below this one of flannel. Several sets of these strainers should be on hand, that they may be frequently changed and washed. They should be stretched loosely over hoops to fit over the juice barrel.

Saccharometer, or hydometer—a "Beaume" saccharometer also a tall, clear, wide mouth bottle, or a tin cylender with broad base, two inches in diameter and ten inches deep, should be provided. They are absolutely necessary for uniform work. They can be had or ordered by any druggist.

Juice tanks and settling tanks are necessary for good results. Kerosine, or whiskey barrels, burned out with straw and perfectly cleaned, answer very well. They should be sawed in two making two tubs out of each barrel. Eight or more such tubs should be provided for a small mill, making, say forty gallons per day. Each tub should have a cover, made of cloth stretched tightly over a hoop to fit snugly over the tub.

A juice barrel, at the mill, with its strainers, and a lime-wash barrel must also be provided. The evaporator, or kettles, should be well set in masonry and covered with a shed. If kettles are used, two at least should be provided, of say, sixty and eighty gallons each; the larger one for the "clarifier," the smaller one for the evaporator and finishing kettle. Properly handled, no appartus makes a better quality of syrup than does the old fashioned kettle.

An evaporator for a small crop should be four feet wide and eight feet long, with wooden sides ten inches deep, of one and one-half inch timber, with a partition five feet from end, for the "clarifier." leaving a space of three by four feet for the syrup or finishing end. It should be bolted at each end with iron bolts. The bottom should be of plain sheet iron, steel, or copper, neatly put on; copper being by far the most satisfactory and lasting material. A small gate, three by four inches, should be provided between the two compartments with a short pipe at the lower corner of each compartment, with a valve or plug.

Sulphur.—Sulphuric acid gass, vapors of burning sulpher, is largely used in syrup making in Louisiana. I do not advise its use on a small apparatus. In the hands of a trained sugar boiler it is very efficient as a defficator and disinfectant, and makes a clear syrup. If not skillfully handled it causes the syrup to oxydise and become dark after standing. It requires a special apparatus, costing more than the balance of such a small outfit, and requiring more care. With care, cleanliness, a supply of good lime wash, with sufficient strainers, neatly made and kept clean, with an abundance of tubs to settle juice and syrups in, as bright, clear and satisfactory syrup may be made on a small evaporator, or kettle, as in the largest and most expensive factories.

Of course a steam outfit is to be preferred when the supply of cane will justify it. The labor is less, the control is better and the waste is reduced to a minimum

Process —Having ground out enough juice to fill the kettles (both of them), or the evaporator (both ends), after straining off all mechanical impurities, pouring out the juice carefully from the tubs (leaving the mud behind), fill about half full the evaporator; add lime wash at the rate of one quart to the one hundred gallons of juice, test it with blue litmus paper; if the paper shows a faint pink it is right; if bright pink, add a little more lime water. If the paper is not changed you have too much lime; add more juice till you get a decided pink color.

Heat the juice not quite to the boiling point. Don't skim till the juice gets hot and is about to boil; then draw out your fires. You must not "boil up" the juice till it is skimmed and settled. Skim off the green thick skum carefully; by this time a lot of heavy impurities, or mud, will have settled on the bottom of the evaporator or kettle; they can be removed only by settling and decanting the clear juices. If in a kettle it must be dipped out and placed in the settling tubs; from an evaporator it can be run out from the valves or plugs that are provided in each end of the evaporator. After placing this first run in the settling tanks, you can continue, using *only* the clarified end of the evaporator for liming, running off the limed, skimmed, hot juice into tubs to settle out the heavy impurities. This settled juice can then be evaporated, or boiled down to syrup, carefully skimming at all times. No boiling nor skimming will remove the heavy impurie ties. They can only be removed by settling the thin, hot juice after liming and skimming off the light impurities. By no means "boil up" the impure juice before it is thoroughly skimmed and settled. If these impurities are "boiled in," the syrup will be turbid and no subsequent treatment will make a first class article of it. The settled juice should be clear as spring water, with no turbidity whatever. It should be tested frequently. Use a clear bottle for a test tube—put a wire handle on a clear four ounce bottle to dip it in the hot liquid.

In boiling, keep the compartment well filled with juice; as it thickens add more from the settling tubs; add juice till you have the finishing pan as full as is convenient to handle with well cooked semi-syrup. When you reach 30° Beaume, (test by filling the tin-cylender or wide mouth bottle with the hot juice or syrup, and drop in the Saccharometer frequently), when you reach 34° Beaume, run off your syrup into clean cans, jars, jugs, or bottles, and seal at once while hot If properly clarified, skimmed and settled as directed, and boiled carefully to this density, the syrup, will be found of excellent quality, clear and bright, and will keep indefinitely if sealed hot in clean jars, cans, bottles or jugs. It is practically impossible to perfectly sterilize a wooden vessel, hence it is not practical to keep syrup in barrels. It may be kept in large tanks if they are thoroughly sterilized by *hot* steam, filled with *hot* syrup, and the air not allowed access, except through a steailized medium.

SUMMARY.

1st. Use a good mill, strain the juice carefully, settle off as much heavy impurity as possible.

2d. Add one quart lime-wash, about four ounces lime to each one hundred gallons of juice, or in the same proportion, keeping the juice slightly acid; heat carefully to the boiling point without ebullition, skim carefully, decant into settling tanks. Use only the clear, settled juice in making the syrups.

8d. Boil slowly but steadily, adding clarified, settled juice from time to time, till a "strike" is ready at 30°.

Boil down to 34° and run off into cans, etc., direct, and seal while hot.

Parties interested are advised to write to the United States Agricultural department for Farmers Bulletins Nos. 90 and 135, on the manufacture of sorghum syrup. The directions given in these bulletins are equally applicable to making cane syrup.

Also to procure Bulletins Nos. 70 and 75 of the Chemical Division of the United States Agricultural Department on the manufacture of cane syrup.

By writing to the Louisiana Agriculture Experiment Station for Bulletin No. 8, Revised Edition—"Sugar Manufacture on a Small Scale," by Wm. C. Stubbs, Ph.D., much valuable information may be obtained.

By carefully observing the methods recommended in these various Bulletins, with care as to details and some experience, no difficulty should be had in making a first class article of syrup.

There are many devices offered to the public of "patent evaporators" and "methods." Few, if any, are of value. No apparatus will remove the impurities and make a good article of syrup without intellegent care and attention. The best equipped kitchen will not make a good cook of a tryo, while a good cook will prepare a choice meal with the most ordinary apparatus.

Some of the very best syrups are made in an open kettle in a clay furnace, with a trough dug out of a log as a syrup tank. While some of the poorest, muddy, thin slops are made with "patent apparatus" and processes. This is readily accounted for. The operator depends on the "patent pan" or evaporator—generally some old device discarded years ago—to do the work without attention and care, and failure naturally results.

With good cane, care, attention to details, cleanliness and industry, every farmer should make a supply of choice syrup, with a surplus to sell at fair prices, if well made and properly packed in clean cans, bottles or jars, and sealed while hot. Such syrup will never sour; it may crystalize. If so, the sugar may be dissolved in a little hot water and reboiled and a first class syrup secured, in every way similar to the original syrup, with the same flavor or aroma.

Tallaharssee, September, 1903.

STANDARD COMMERCIAL FERTILIZERS

Made by Reputable Manufacturers, Compared to Irregular, Unknown Makers, or Brands.

There has been some considerable complaint this season from the cotton growing counties, of the failure to obtain satisfactory results from the use of certain "Guanos," or "Ammoniated Bone," etc. On examination, analysis and inquiry, these goods have been found to be low grades, made by some concern not generally known to the State, with no local habitation, and no State representative. Their guarantee is the ordinary cotton goods guarantee—10-1-1 or 8-2-2. Seldom do they analyze even these small amounts of fertilizing elements.

This fraud is hard to prevent, and, without the hearty co-operation of the consumer, impossible to detect. A few tons are sold in a locality by glib tongued agents, or by circulars. The goods are applied, failure results, and after the damage is done, the Department is requested to assist in collecting damages. This could be readily done provided the goods were not as represented, and the manufacturers represented in the State by a reliable agent. This is seldom the case. The agent is not to be found, and no recourse is to be had.

The advice always given to consumers is to purchase only those goods made by well known manufacturers, who have factories or well known agencies located in the State.

No State has better facilities for procuring first-class commercial fertilizers than has Florida. Her factories at Pensacola, Quincy, Gainesville, Jacksonville, Orlando and Tampa are well equipped, and turn out any class of goods desired, at fair prices and with full guarantee as to quality.

There are also agencies of standard well-known manufacturers of other States located in the various cities of the State, handling none but first-class goods, sold on full guarantee, with ample responsibility to protect the same.

There is no excuse for purchasing low grade or inferior goods of unknown or irresponsible parties. As a rule such goods are inferior and sold at higher proportionate prices than standard manufactures.

All reputable manufacturers publish a catalogue and price list of their goods recommended for various crops. These can be had for the asking (and frequently also contain valuable agricultural and other information besides.)

By using ordinary diligence, care and business methods, there is no reason why inferior or fraudulent goods should be used by our farmers.

Buy only those goods made by well known, reputable and responsible makers. If the goods then prove not to be as represented, damages can be collected. If, however, the goods are from some practically unknown source, with no local habitation and no responsibility, it is practically impossible to obtain redress.

R. E. ROSE, State Chemist.

SPECIAL NOTICE.

The attention of persons sending samples of fertilizers for analysis is called to the following:

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER SAMPLES TO THE COMMISSIONER OF AGRICULTURE. —SECTION 15 OF LAW.

Special samples of fertilizer sent in by purchasers, under Sec. 9 of the law approved May 22, 1901. Shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed and a FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICTLTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN OR BOTTLE WILL BE ACCEPTED FOR ANALYSIS. This rule is adopted to secure fair samples of sufficient size to make the six recessary determinations, viz: Moisture, available and insoluble phosphoric acid, ammonia and potash; and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means, of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

COPIES OF THE FERTILIZER LAW.

Citizens interested in the fertilizer law of the State, and desiring to avail themselves of its protection, can obtain a copy free of charge by sending for same to the Commissioner of Agriculture.

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VOLUME 13
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FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

OCTOBER 1, 1903.

B. E. McLIN
COMMISSIONER OF AGRICULTURE,
TALLAHASSEE, FLORIDA.

Part 1—Crops. Part 2—Weather Report.
Part 3—Fertilizers. Part 4—Miscellaneous.

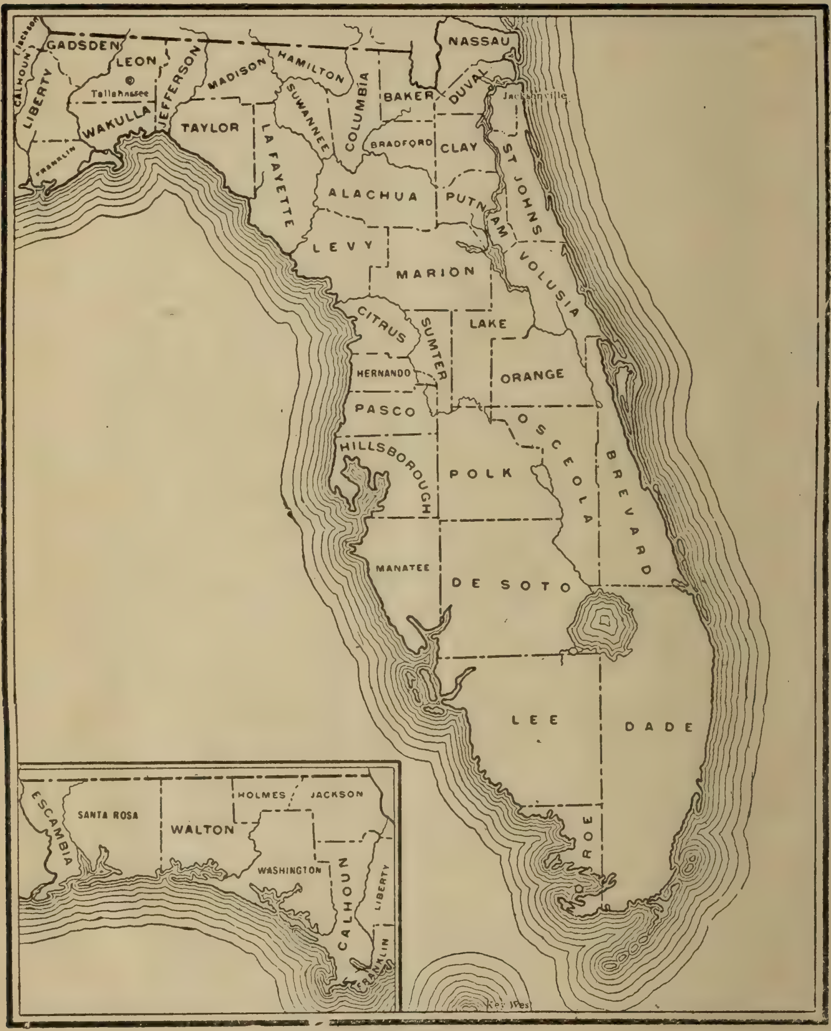
Entered January 31, 1903, at Tallahassee, Florida, as second-class matter, under Act of Congress, of June 1900.

These Bulletins are Issued free to those requesting them.

TALLAHASSEE, FLA.,
I. B. HILSON, STATE PRINTER.

County Map of the State of Florida.

(For the Bulletin.)



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PART I

CROPS.

DEPARTMENT OF AGRICULTURE.

Hon. B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

ALACHUA COUNTY.—The cotton crop will be short of last year. It has been damaged by worms very considerably as well as by the heavy rains. Other crops are pretty good. Fall vegetable planting is very backward on account of dry weather.

BAKER COUNTY—Cotton is very short because of too much rain, followed by too hot sun, causing rust, etc. Weather very dry. Sugar cane, rice and potatoes doing well.

COLUMBIA COUNTY.—We had entirely too much rain in August for cotton, and September has been dry and cool, which has been very good on cotton that was not drowned out and was kept well cultivated. The hay crop was promising and was ready to cut before the rain stopped; much of it was lost on account of rain. Pecan trees have grown well this year. Cattle and hogs have done well; very few have died fromdisease.

DADE COUNTY.—The condition of citrus trees was somewhat reduced and the yield of fruit slightly shortened by the hurricane of September 11th. Other crops that are grown here are doing very well.

DESOTO COUNTY.—The storm of 11th and 12th of September did considerable damage to some crops, particularly rice; also all citrus trees and fruits; the damage in condition of trees fully 5 per cent., and loss of fruit 10 per cent. Considerable damage was also done to newly planted fall and winter crops; much replanting will be necessary.

ESCAMBIA COUNTY.—The continuous drought since first of July has cut off all late crops. Cotton has lost about one-third; cane, potatoes, peas, velvet beans and the hay crop is of little good. Up to this date, October 2nd, we have had no rain.

FRANKLIN COUNTY.—Such crops as we grow in this county are doing well. Fall gardens are also looking well after the severe storm. A large acreage is planted in these crops.

GADSDEN COUNTY.—The cotton crop is short, but other field crops are good. The tobacco crop is much larger and finer than last year. Some crops are unusually fine. Weather fine for picking cotton, which is almost done.

HAMILTON COUNTY.—Owing to the excessive rain here through the month of September, fall crops have been badly damaged, and cotton crops cut off at least one-fourth. Most of the other crops also damaged considerably.

HOLMES COUNTY.—We had a three or four weeks drought up to September 13th on which date the storm came and both were very damaging to crops. It is very dry now, and has been ever since the storm. With few exceptions the crops will be very short.

JACKSON COUNTY.—The cotton crop will be short, considerably, on account of the storm and dry weather, which still continues. Most of the cotton crop is gathered. Rain is badly wanted on account of fall crops just planted.

JEFFERSON COUNTY.—Crops this year are better than last, and most of them are turning out well, especially corn and cane. The storm did some damage to crops, and cut some of them short. Stopped cotton from growing, and the long dry weather has also kept further development back.

LAFAYETTE COUNTY.—Cotton crop short; weather very dry. Gathering of crops progressing rapidly; cotton will soon be picked. Field peas, potatoes and hay will be good.

LAKE COUNTY.—The long continued dry spell has done considerable injury to fall and winter vegetable crops, and also prevented a great many seed from sprouting; rain much needed; oranges doing very well.

LEON COUNTY.—Cotton picking will be all over before November 1st. The crop is very short, much of the weed, or plant; having been killed by the storm, which will prevent further bearing. Corn and other provision crops are very good and yielding well.

LEVY COUNTY.—The weather is very dry. Cotton picking is progressing nicely; crop will be short; some complaint of red bugs. Corn crop has turned out well, as have most other provision crops.

LIBERTY COUNTY.—Cotton crop short, and all crops affected more or less by unfavorable seasons and severe storm.

MARION COUNTY.—Crops are all good in this county.

First part of month there was too much rain, but for the past few days the weather has been all that could be asked for gathering crops.

ORANGE COUNTY.—We have the best crops on the whole that we have ever had. Stock of all kinds in good condition. Orange and other citrus trees are doing well.

OSCEOLA COUNTY.—But little damage was sustained from the storm in this county, but much of the cassava crop rotted from continued rains. The plantings of fall vegetable crops is much delayed from same cause.

POLK COUNTY.—The storm did considerable damage to oranges and grape fruit in some sections, but do not think the damage exceeds 5 per cent. The greatest damage was to truck farms, where fall planting was under way, and to young truck from overflow of lands in some localities. On the whole crops are fine.

PUTNAM COUNTY.—Crops in a general way are fairly good; and will yield an average. There are some insects making their appearance on the orange and grape fruit trees.

SANTA ROSA COUNTY. The long continued drought and cool winds prevent crops from growing, and all are suffering very much for rain. Cotton crop is very short and some others will be if the unfavorable weather continues.

SUMTER COUNTY.—Crops in this county seem to be about an average—fully up to that—except perhaps the orange crop, which is rather small for the size of the trees, but the growth of the trees this year has been extra good. Crops better than last year. Crops, generally, will average well.

SUWANNEE COUNTY.—For two weeks past the weather has been very fine. Corn about all gathered; cotton is being picked very rapidly, and crop only fair. Crop of broom corn is small, but quality of straw is as fine as any produced in the west. All are prospering amid peace and plenty.

WALTON COUNTY—Cotton crop is short, but most of the field crops are good and will yield well unless the drought now prevailing should cut some of them short, such as cane, potatoes and beans.

WASHINGTON COUNTY.—The storm of the 13th of September did great damage to cotton, cane, rice, cassava and hay. All crops were laid flat on the ground. The storm was the worst seen in this section for twenty years.

REPORT OF CONDITION AND PROSPECTIVE YIELD OF CROPS FOR SEPTEMBER, 1903, AS COMPARED WITH AN AVERAGE.

COUNTIES	Upland Cotton		Sea Island Cotton		Sugar Cane		Field Peas		Rice		Velvet Beans	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua...	....	....	70	70	80	70	90	100	...	....	90	90
Baker.....	....	....	50	40	100	100	50	50	100	100	....	....
Bradford..	....	...	75	75	100	100	90	100	....	....	....	....
Brevard...	....	....	....	....	80	80	....	....	....	....	....	....
Calhoun...	....	....	....	..	95	95	85	90	80	80	....	....
Citrus.....	....	....		....	90	100	100	100	....	....	100	100
Columbia..	....	....	75	60	100	105	100	100	70	75	100	100
Dade......	....	..	....	....	....	....	....	....	....	....	....	....
DeSoto....	....	....	....	....	100	100	100	100	90	100	100	110
Escambia..	75	75	....		50	50	50	50	100	100	50	50
Franklin...	....	....	....	....	90	90	85	90	....	....	....	....
Gadsden...	80	70	80	70	100	100	100	100	100	100	100	100
Hamilton..	....	....	75	75	75	60	75	75	50	60	75	75
Hillsboro	....	...	....	....	100	110	95	100	90	90	85	80
Holmes....	60	75	....	....	100	100	90	90	85	95	95	100
Jackson...	75	75	75	80	100	100	100	100	100	100	100	100
Jefferson..	65	70		....	100	100	95	100	....	....	....	....
Lafayette..	....	....	85	85	100	100	....	....	....	....	95	100
Lake.......	....	....	....	....	100	100	50	50	....	...	80	85
Lee.......	....	....	....	....	100	125	100	110	100	110	100	110
Leon.......	70	62	....	....	95	100	100	100	80	80	100	100
Levy......	....	....	75	70	80	80	100	100	100	100	90	90
Liberty....	75	80	...	....	90	95	80	80	80	80	....	....
Madison...	70	70	70	70	100	100	100	100	70	70	..	....
Manatee ..	....	....	....	....	100	150	....	....	100	100	200	200
Marion....	100	100	100	80	110	110	110	105	100	100	90	90
Nassau....	....	....	....	....	100	100	100	100	....	....	....	....
Orange....	....	....	....	....	90	110	90	80	....	....	100	110
Osceola...	....	....	....	....	100	100	100	100	100	100	125	100
Polk......	....	...	....	....	100	100	100	100	100	100	75	75
Putnam...	....	....	75	75	100	100	80	80	....	....	90	95
St. Johns.	....	...	....	....	115	115	115	120	115	115	110	120
Santa Rosa	70	75	....	....	85	85	75	70	90	85	75	90
Sumter..	....	....	95	100	90	100	90	90	100	100	90	100
Suwannee.	....	...	90	90	100	100	100	100	90	90	90	90
Walton....	70	75	....	....	100	100	90	90	100	100	100	100
Washington	60	60	90	90	100	10	100	100	90	90	75	75
Gen'l av'ge.	73	74	79	75	95	98	90	92	91	93	96	98

CONDITION OF CROPS.—Continued.

Counties.	Sweet Potatoes		Peanuts		Cassava		Hay		Bananas		Orange Trees	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua...	90	90	60	60	....	....	100	100	....	....	90	...
Baker.....	100	100	50	50	....	....	...	....	....	....	....	....
Bradford..	100	100	70	70	....	....	100	100	....	....	..	....
Brevard...	90	100	....	....	....	....	...	....	100	125	100	125
Calhoun...	90	100	..	....	....	....	80	85	....	....	100	....
Citrus....	100	100	100	100	....	....	100	100	....	..	100	100
Columbia..	100	105	90	100	....	....	100	75	....	....	....	....
Dade.....	100	100	....	....	....	....	...	....	100	100	100	100
DeSoto....	100	100	90	90	100	100	100	110	100	110	95	120
Escambia.	50	50	75	50	75	75	50	50	....	....	....	....
Franklin...	95	95	90	95	....	....	100	100	....	....	....	....
Gadsden...	100	100	100	100	100	100	150	150	....	....	....	...
Hamilton..	80	75	80	75	....	...	80	75	....	....	....	....
Hillsboro	100	100	....	....	....	....	100	105	....	...	110	115
Holmes....	100	80	80	100	....	....	....	....	....	....	....	....
Jackson....	110	110	100	100	..	....	200	200	....	....	....	....
Jefferson..	75	85	100	100	100	100	....	....	....	....	....	....
Lafayette.	100	100	90	90	....	....	110	110	....	....	....	...
Lake......	75	80	100	100	50	50	80	80	...	....	100	....
Lee.......	100	100	....	....	100	100	100	100	100	100	100	95
Leon.......	100	100	100	100	100	115	100	125	....	....	....	....
Levy......	100	100	100	100	100	100	100	100	....	....	..	....
Liberty....	95	95	75	75	....	....	80	80	....	....	....	...
Madison...	100	100	100	100	..	...	90	100	...	....	....	....
Manatee...	100	100	....	....	....		..	...	100	100	90	95
Marion....	100	100	100	110	100	100	100	120	....	.	100	120
Nassau....	100	110	....	..	....	....	100	100	100	100	...	...
Orange....	80	90	....	....	95	100	100	90	....	....	100	110
Osceola...	100	100	100	100	100	70	75	100	100	30	100	150
Polk......	100	100	100	100	100	100	75	75	....	....	100	75
Putnam...	90	100	80	100	100	100	80	90	.	....	100	80
St. Johns.	120	125	..	....	100	120	100	120	120	....	150	....
Santa Rosa	90	100	90	95	75	80	90	95	....	....	....	....
Sumter....	90	95	85	90	....	....	100	100	...	....	90	85
Suwannee.	100	100	100	100	50	50	100	100	....	....	....	....
Walton....	95	95	100	100	....	....	90	90	....	....	....	...
Washington	85	85	90	90	100	100	95	95	....	....	....	....
Gen'l av'ge	95	96	93	91	91	92	98	101	103	94	101	106

CONDITION OF CROPS—Continued.

COUNTIES	Lemon Trees		Lime Trees		Grape Fruit Trees	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua..........	......	.....	......	.....	....	....
Baker............	......	......	......	......	....	....
Bradford.........	.....	......	......	......	....	....
Brevard..........	100	150	......	......	100	100
Calhoun..........	......	......	......	......	100	....
Citrus...........	......	......	......	......	100	100
Columbia.........	......	....	..	......	....	......
Dade.............	100	100	95	80	100	100
DeSoto...........	95	130	95	120	95	100
Escambia.........	....	.....	......	......	....	....
Franklin.........	.....	...	......	......	.....	....
Gadsden..........	......	......	......	......	....	....
Hamilton.........	......	....	......	......	......	....
Hillsborough.....	..	......	......	.....	110	115
Holmes...........	......	......	..	......	....	....
Jackson..........	......	......	......	......	.....	....
Jefferson........	.....	......	......	......	....	....
Lake.............	.....	......	......	......	....	....
Lafayette........	100	......	..	......	100	....
Lee..............	100	95	100	90	100	100
Leon.............	...	......	......	......	....	....
Levy.............	......	......	......	......	....	....
Liberty..........	......	......	......	....	......	....
Madison..........	......	...	......	......	....	....
Manatee..........	......	.....	......	.....	....	....
Marion...........	100	100	100	100	100	120
Nassau...........	......		......	......	....	....
Orange...........	75	90	.....	......	100	75
Osceola..........	125	150	125	100	125	80
Polk.............	100	75	100	75	100	100
Putnam...........	100	.....	100	......	100	80
St. Johns........	......	......	......	....	150	....
Santa Rosa.......	......	......	......	......	....	....
Sumter...........	......	....	.....	......	95	85
Suwannee.........	......	......	......	......	....	....
Walton...........	......	......	......	......	....	....
Washington.......	......	......	......	......	....	....
General Average...	100	111	102	94	105	96

PART II.

WEATHER REPORT.

SALIENT CLIMATIC FEATURES.

ATMOSPHERIC PRESSURE.

	Inches
Mean, as determined from records of 4 stations....	30.00
Departure from the normal, 4 records.............	0.00
Highest observed, at Jacksonville on the 3d.........	30.26
Lowest observed, at Pensacola on the 19th.........	29.77
Absolute range for the State........................	0.49

TEMPERATURE.

	Degrees
Mean, as determined from record of 55 stations.....	82.4
Departure from the normal, 26 records	+1.0
Highest monthly mean, at Orlando.............	85.4
Lowest monthly mean, at New Smyrna.............	80.0
Highest recorded, at two stations.....................	102
Lowest recorded, at Wewahitchka on the 26th.......	63
Absolute range for the State..........	39

PRECIPITATION.

	Inches
Average as determined from records of 48 stations..	6.86
Departure from the normal, 25 records	—0.84
Greatest amount for any 24 hours, at Bartow on 31st	5.62
Greatest monthly amount, at Johnstown	14.79
Least monthly amount, at Jupiter	2.47
Average number of days on which 0.01 or more fell	14

NOTE.—In computing departures records that extend over ten or more years only are used.

WIND.

Prevailing wind direction...................Southwest.

WEATHER.

Average number of clear days........................	11
Average number of partly cloudy days	14
Average number of cloudy days................. ...	6

PRESSURE AND WIND TABLE.

STATIONS	Atmospheric Pressure					Wind Velocity in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville..	20.99	30.26	3	29 81	19	6,156	55	w	5	100	54	84
Jupiter	30.02	30.22	2	29.88	19	6,[illegible]25	48	se	1	89	72	80
Key West.....	29 98	30 17	3	29.89	19	5 183	34	e	12	96	64	74
Pensacola.....	*30.01	30.24	3	29.77	19	5,737	45	w	7	93	56	81
Tampa........	30.00	30.24	3	29.84	19	3,754	30	e	4	100	66	81

*8 a. m. reading only.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Farh.							Precipitation, in inches.					Sky.			Prevailing direction of wind.	OBSERVERS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.		
Northern Section,																				
Archer......	Alachua	92	21	81 1	—0.6	96	28	68	24	25	10.71	+3 54	3.56	...	23	6	22	3	se-w.	Wm. C. Andruss
Federal Point.	Putnam.....	10	11	82.8	+2.0	96	25*	70	5*	25	4.19	—3 09	1 85	...	11	6	21	4	s-w.	E. S. Hubbard
Fernandina....	Nassau	15	2	82.6	+2.8	97	6*	71	13	24	3.06	—2.47	0.83	...	14	13	11	7	s-e.	W. B. C. Duryee
Fort George†...	Duval........	15	18	81.9	+1 5	93	7	74	5	...	......	......	.....	...	...	...	...	...	s-e.	Chas. B. Spencer
Gainesville....	Alachua	175	17	82.0	+1.0	97	3*	69	29	28	8.63	—0 13	1.87	...	19	21	4	6	s.	J. P. H Bell
Huntington....	Putnam	50	7	83.8	+2.3	101	26*	68	31	31	5.20	—3.27	0.93	...	19	15	14	2	w-sw.	Benj. N. Bradt
Jacksonville...	Duval........	43	33	82.0	+0.9	97	29	69	12	28	6.60	+0.11	2.01	...	22	5	19	7	sw.	CENTRAL OFFICE ‡
Japer.........	Hamilton	165	5	.....	.....	...	...	...	...	...	......	......	.....	...	...	...	...	...	......	Prof. R. D. Hall
Johnstown.....	Bradford	125	8	*b*81.6	—0.1	*b*97	27	*b*65	10	*b*27	14 79	+5 60	1.95	...	15	1	19	11	......	J. P. Coffin
Lake City......	Columbia....	201	13	82.0	+0.6	98	26*	68	29	27	10.04	+3 79	1.57	...	16	1	16	14	sw.	W, B. Knight
Macclenny.....	Baker.......	140	8	83.9	+1.2	102	28	70	4*	29	7.07	—1.44	1.65	...	12	17	11	3	e.	Griffin Bros. Co.
Micanopy......	Alachua	105	7	.....	.....	...	...	...	...	...	......	......	.....	...	...	...	...	...	......	W. A. Carlton
Middleburg...	Clay	20	4	82.2	.....	102	25	66	6	31	10.01	......	2.28	...	12	6	13	12	sw.	Geo. R. Frisbee, Sr.
Pinemount.....	Suwannee....	103	1	83.0	.....	99	29	71	5*	27	9.55	......	1.75	...	21	2	26	3	sw.	S. E. Thompson
St Augustine..	St. Johns.....	10	53	82.0	+1.5	97	25	68	10*	26	3.48	—0.88	0.48	...	15	3	6	22	se.	Herbert J. Usina
Sumner........	Levy...	23	13	80.7	+0.6	95	28	69	5*	26	14.14	+5.58	2.50	...	11	8	16	7	nw.	J. P. Little
Switzerland....	St. Johns.....	...	7	*a*81.4	+1.6	*a*96	28	*a*69	5	*a*23	6.22	+0.12	2.22	...	18	...	...	...	......	W. C. Steele

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.	OBSERVERS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.		
Central Section.																				
Bartow	Polk	17	8	83.3	+1.7	95	22	71	31	20	11.64	+4.90	3.62	...	26	5	16	0	sw.	J. S Wade
Brooksville	Hernando	328	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	C. C. Peck
Clermont	Lake	110	11	82.1	—0.6	99	25	70	16*	25	6.84	—1.28	2.23	...	11	3	28	0	se.	Dr. J. B Rosenberg
De Land	Volusia	32	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	F. G. Brill
Eustis	Lake	180	13	84.2	+2.0	101	29	73	5*	25	4.39	—2.63	1.45	...	14	5	13	13	...	A. L. Brown
Fort Mead	Polk	125	20	83.4	+2.3	97	21*	69	31*	28	10.86	+1.67	2.40	...	12	14	16	1	e.	William Thompson
Fort Pierce	Brevard	25	12	81.4	—1.2	96	27	67	1	26	4.82	—1.83	1.46	...	9	15	4	12	se.	T J. O'Brien
Grasmere	Orange	175	7	83.2	+1.4	96	28	71	30*	21	...	...	...	...	...	21	9	1	sw.	John B. Escott
Inverness	Citrus	43	3	81.8	...	95	11*	69	28*	26	10.27	...	1.82	...	18	2	19	10	sw.	W. H. Miller
Kissimmee	Osceola	65	11	82.5	—0.1	99	28	71	8*	24	4.31	—4.35	1.10	...	8	19	0	12	se.	J A. Simpson
Malabar	Brevard	..	2	83.2	...	98	6	70	2*	27	4.84	...	1.10	...	9	29	2	0	se.	J. F. Farley
Merritt's Island	Brevard	20	22	83.8	+2.2	95	28*	73	2	17	6.78	+1.33	3.05	...	6	27	4	0	se.	Rev. J H. White
New Smyrna	Volusia	20	15	80.0	+0.3	94	6	69	16*	23	8.75	+2.61	2.30	...	9	8	21	2	se.	J. P. Turner
Ocala	Marion	150	16	82.6	+1.5	99	28	69	26	28	9.70	+1.78	1.85	...	16	11	13	7	sw.	W. L. Jewett
Orange City	Volusia	50	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	J. D. Graham
Orange Home	Sumter	...	...	82.4	...	97	26*	69	29*	27	4.94	...	0.82	...	17	...	...	...	...	D M. Baker

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.	OBSERVERS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hour.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days		
Orlando	Orange	98	12	85.4	+3.6	99	28*	73	28	26	3.68	—3.83	1.40	...	10	13	15	3	sw.	L. C. Hazel
Plant City	Hillsbor'gh	121	11	83.0	+1.2	97	11*	68	31	25	7.00	—1.10	1.20	..	12	...	...	...	s.	E. B. Trask
Rockwell	Marion	...	4	.....	...	...	...	...	...	...	.....	.....	...	...	...	...	...	...	......	Dunnelon Phos. Co.
St. Leo	Pasco	140	9	81.8	—0.9	98	23	69	23*	29	6.32	—5.27	1.81	...	20	16	10	3	w.	G. Schneider
Tampa	Hillsbor'gh	20	13	82.6	+1.6	95	15	69	4	24	6.00	—2.75	1.79	...	19	11	16	4	w.	N. R. Taylor ‡
Tarpon Springs	Hillsbor'gh	20	19	82.4	+1.2	97	1*	69	14	26	8.15	—1.58	3.04	...	16	18	7	6	nw.	Dr. A. P. Albaugh
Titusville	Brevard	11	12	82.1	+2.1	96	29	67	31	27	4.77	+0.60	1.23	...	10	0	30	1	se.	Max L. von Koppelow
Southern Section,																				
Avon Park	De Soto	150	7	83.8	+1.8	98	28*	70	30	28	4.85	—2.69	1.37	...	15	9	15	7	sw.	O. R. Thacher
Flamimgo	Monroe	11	3	....	...	...	...	...	...	...	.....	.....	...	...	...	...	..	...	......	E. R. Bradley
Hypoluxo	Dade	...	7	80.8	—0.6	91	29	70	13	18	3.94	—1.12	1.60	...	9	20	11	0	se.	A. W. Garnett
Jupiter	Dade	28	16	82.9	+1.9	96	29	69	2	20	2.47	—3.09	0.69	...	14	7	23	1	se.	Hal. P. Hardin ‡
Key West	Monroe	22	33	84.0	+0.1	93	11	72	12	15	4.24	—0.53	2.29	...	10	14	15	2	se.	W. U. Simons ‡
Manatee	Manatee	16	20	81.6	+0.4	96	1	68	31	25	4.50	—4.86	2.03	...	17	5	21	5	w.	Emil Broberg
Marco	Lee	...	3	83.6	.....	97	10	70	12*	21	6.71	......	1.48	...	17	20	9	2	sw.	Ludlow Fruit Co.
Miami . . k	Dade	...	7	83.8	+1.0	94	19*	70	18	20	2.35¶	......	.....	...	...	...	...	...	......	E. V. Blackman
Myers	Lee	19	20	.....	.....	...	...	...	...	...	......	......	.....	...	...	...	...	...	......	Miss M. M. Gardner
Nocatee . . l	De Soto	43	4	83.4	.....	97	13	68	30	27	7.76¶	..	.....	...	...	...	...	...	......	W. G. Welles

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.	OBSERVERS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days		
Western Section.																				
Bonifay	Holmes	116	2	82.6	...	98	27*	70	10*	23	1.86¶	...	...	...	...	3	4	24	nw.	C. W. Gwartney
Carrabelle	Franklin	12	8	80.2	—1.5	93	26	70	24	19	8.17	+1.01	1.20	...	14	...	...	...	w.	O. H. Kelley
DeFuniak Sp'gs	Walton	193	7	80.9	+0.5	96	28	67	11*	26	9.96	...	2.14	...	16	5	21	5	s.	J. T Stubbs
Holt	Santa Rosa	208	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Miss S. T. Seigler
Madison	Madison	...	...	83.6	...	96	3*	70	6*	23	7.79	...	1.54	...	10	18	8	5	sw.	Randall H. Rowe
Marianna	Jackson	85	4	81.4	...	94	26*	70	1*	22	4.56	...	2.00	...	9	17	12	2	sw.	W. J. Watson
Molino	Escambia	49	...	82.0	...	100	26*	66	9	30	5.94	...	1.81	...	7	22	9	0	s.	W. H. Trimmer
Pensacola	Escambia	56	24	82.3	—1.9	94	29	70	7	19	2.73	—5.63	1.37	...	12	7	21	3	nw.	B Bunnemeyer ‡
Quincy	Gadsden	260	3	...	...					...	...	...	...	...	...	...	...	...	...	Sol. Friedman
St. Andrew	Washington	12	6	82.6	+1.1	95	27*	71	3*	22	7.95	.	3.56	...	12	23	6	2	sw.	W. A. Emmons
Stephensville. o	Taylor	...	4	81.5	...	97	29	70	4*	25	14.69¶	...	...	...	...	...	...	...	sw.	Miss Mary F King
Tallahassee	Leon	193	18	81.6	+2.0	94	24*	72	7*	20	2.98	—4.46	0.76	...	8	...	...	...	...	W. H. Markham
Waukeenah	Jefferson	...	2	81.6	...	96	12	69	1*	23		...	...	...	.	26	0	5	sw.	Miss Rita Oder
Wausau	Washington	250	6	82.4	+0.5	100	14	70	1	29	7.65	...	2.75	..	13	7	16	8	s.	Curtis Jones
Wewahitchka	Calhoun	...	4	82.3	...	98	26	63	26	35	7.30	...	3.58	...	19	4	7	20	sw.	E. G. Mach
	State Means	...	...	82.4	+1.0	...	..		...	...	6.86	—0.84	...		14	11	14	6	sw	

CLIMATOLOGICAL DATA FOR AUGUST, 1903.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.	OBSERVERS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days		
Miscellaneous.																				
Bainbridge....	Decatur...Ga	119	13	80.8	—0.3	94	29	69	12	20	6.17	—0.07	1.49	...	16	...	...	...	.....	J R. Graves
Daphne........	Baldwin..Ala.	...	13	b82.6	+1.2	b97	29	b70	12*	b20	3.17	—6.17	1.55	...	7	11	10	10	sw.	J. H. Young
Havana........	Cuba.........	57	10	80.3	—1.9	90	9	70	5	19	3.93	—2.09	1.92	...	13	13	16	2	e.	W. C. Devereaux ‡
Mobile.........	Mobile...Ala	35	33	81.8	+1.5	94	17	70	7	22	6.37	—0.53	2.21	...	13	5	22	4	w.	W M. Dudley ‡
Montgomery...	Montgomery..Ala.	219	31	81.4	+1.6	97	27	68	31	23	4.57	+0.44	3.41	...	13	9	13	9	w.	Frank P. Chaffee ‡
Nassau........	N. P.....Bahamas	...	9	82.6	.....	90	1*	70	2*	18	2.93	....	1.10	...	11	...	..	...	.....	P. H. Burnes
San Juan......	Porto Rico...	82	28	80.6	—0.8	89	6	71	22	15	8.41	+2.54	3.00	...	22	8	15	8	e.	Edwin C. Thompson ‡
Savannah......	Chatham..Ga.	36	33	82.2	+1.9	99	28	70	31	22	5.17	—2.57	2.10	...	15	8	13	10	sw.	H. B Boyer ‡
Thomasville....	Thomas..Ga.	330	27	82.8	+2.1	99	28	69	12*	27	5.73	—0.60	1.55	..	12		...	...	.....	Dr. R Thomas
Waycross......	Ware....Ga.	131	22	83.3	+1.8	99	27*	70	7	25	9.15	+2.99	2.05	...	18	23	2	6	.....	J. G. Seabrook
Late Report July, 1903.																				
Plant City.....	....	...	...	81.6	+0.1	97	10	66	18	27	9.24	+0.71	1.60	...	14	...	...	...	s.	....

†Thermometers are not self-registering and readings are made at 7 a. m., 2 p. m, and 9 p. m. daily.

* More than one day. ‡ Weather Bureau.

¶ Record incomplete, not inclued in means.

All records, except stations outside of the state, are used in determining State means, but State departures are determined by comparison of current data of only such stations as have records of ten or more years.

a b, c, etc., following name of station, indicates number of days missing from report.

PART III.

FERTILIZERS.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

VALUATIONS.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1902–1903.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen).	15 cents a pound
Potash (as actual potash, K_2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $2·00 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid,	6.39x1.00	$ 6.39
Insoluble Phosphoric Acid,	1.15x ·20	.23
Ammonia	4.93x3.00	14.79
Potash	7.11x1.10	7.82
Mixing and bagging		2.00
		$31.23

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of twenty per cent. can be made in above valuations, *i, e.*:

Available Phosphoric Acid	80 cents per unit
Potash (K_2O)	88 cents per unit
Ammonia (or equivelent in nitrogen)	$2 40 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent and above in ammonia, 2 per cent or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its Commercial value is as follows:

8 per cent. ammonia @ $3.00 - - -	$24.00
2 per cent. available phosphate @ $1.00 -	2.00
1½ per cent. potash @ $1.10 - - - -	1.65
	$27.65

The commercial value being in excess of the market value.

There is a quantity of cotton seed meal offered in the State labeled "For feeding purposes only." These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent. potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia - - - - -	$13.50
1¾ per cent. phosphoric acid - -	1.75
1½ per cent. potash - - - - - -	1.65
Commercial value - - - - -	$16.00

These goods are sold at $1.00 to $2.00 per ton less than prime meal Their relative value is $10.75 less than prime meal. There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of ammonia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis and pay for the actual content of the valuable elements only.

MARKET PRICES.

The following price of manurial chemicals is quoted by reputable dealers and importers in Jacksonville in lots of one to ten tons. The same figures can be made in Pensacola or Tampa, for spot cash f. o. b. cars:

	Less than 5 tons	5 to 10 tons	10 tons.
High Grade Potash 90 to 95 per cent. Sulphate (48 to 50 per cent K2O)	$52 00	$51 00	$50 00
Sulphate Potash, 48 to 55 per cent. Sulphate (25 to 30 per cent K2O)	32 00	31 00	30 00
Muriate Potash 80 to 85 per cent. Muriate (50 to 53 per cent. K2O)	46 00	45 00	44 00
Kainit 12 to 13 per cent. Actnal Potash	15 00	14 50	13 00
Blood and Bone, 6½ per cent. Ammonia	26 50	26 00	25 50
Blood and Bone 7 to 8 per cent. Ammonia	27 50	27 00	26 50
Blood and Bone, 10 per cent. Ammonia	32 00	31 50	31 00
Raw Bone meal, 2 to 4 per cent Ammonia. 22 to 25 per cent. total Phosphoric Acid	32 00	31 50	31 00
Boneblack, 16 to 18 per cent. available Phosphoric Acid	25 00	24 50	24 00
Acid Phosphate, 14 per cent Available phosphoric Acid	13 00	12 50	12 00
Nitrate Soda, 18 to 19 per cent. Ammonia	47 00	46 50	46 00
Sulphate Ammonia, 24 to 26 per cent. Ammonia	72 00	71 00	70 00
Dried Blood, 17 per cent Ammonia	47 00	46 50	46 00
Ground Castor Pomace 6 to 7 per cent. Ammonia	21 00	20 50	20 00
Canada Hard Wood Ashes, 2 to 8 per cent. K2O (Potash)	15 00	14 50	14 00
Pulverized Tobaco Stems, 5 to 8 per cent. K2O (Potash)	15 00	14 50	14 00
Tobacco Stems (baled) 5 to 8 per cent. K2O (Potash)	16 00	15 50	15 00
Tobacco Dust, High Grade, 5 to 8 per cent. K2O (Potash)	21 00	20 50	20 00
Steamed Bone Flour, 3 to 4 per cent. Ammonia, 25 to 28 per cent Phosphoric Acid	25 00	24 50	24 00
Bright Cotton Seed Meal, 7 to 9 per cent. Ammonia	26 50	26 00	25 50
Dark Cotton Seed Meal, 6 to 8 per cent. Ammonia	22 00	21 50	21 00

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19		
Sulphate of Ammonia	21 to 24		
Dried Blood	12 to 17		
Concentrated Tankage	12 to 15	1 to 2	
Bone Tankage	6 to 9	10 to 15	
Dried Fish Scrap	8 to 11	6 to 8	
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	13 to 17	1½ to 2	

PHOSPHATE MATERIALS.

	Pounds per Hundred.		
	Ammonia	Available Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphate			33 to 35
Florida Rock Phosphate			26 to 32
Florida Super Phosphate		14 to 19	1 to 6
Grounded Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissolved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actual Potash	Am'nia	Phosphoric Acid	Lime
Muriate of Potash	50			
Sulphate of Potash	48 to 52			
Double Sul. of Pot. & Mag.	26 to 30			
Kainit	12 to 12½			
Sylvinit	16 to 20			
Cotton Seed Hull Ashes	15 to 30		7 to 9	10
Wood Ashes, unleached	2 to 8		1 to 2	30 to 25
Wood Ashes leached	1 to 2		1 to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4		3½
Cow Manure (fresh)	0.40	0t 41	0.16	0.31
Horse Manure (fresh)	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)	0.67	1.00	0.23	0.33
Hog Manure (fresh)	0.60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.26	0.70

R. E. ROSE, State Chemist. MARION G. DONK, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.
(Samples taken by purchaser).

NAME OF BRAND	Laboratory No	Moisture	Phosphoric Acid			Ammonia	(Potash K20)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer	255	....	5 61	2 32	7 93	2 57	10 85	H. R. Harris, Galloway, Fla.
Lime Kiln Ashes	256	19 95	0 55	0 64	1 19	....	1 76	Schroeder & Auginbaw, Quincy, Fla.
Fertilizer No 1	257	....	4 66	1 16	5 82	5 69	6 73	W. I. Minor & Son, Coleman, Fla.
Fertilizer No 2	258	....	4 49	1 24	5 73	6 00	6 23	" " " " "
Fertilizer	259	8 45	6 04	1 54	7 58	2 32	8 76	W. F. Dees, Kathleen, Fla.
Fertilizer	260	11 65	7 68	1 43	9 11	2 15	11 69	C. W. Flanagan, Lakeland, Fla.
Sulphate of Potash	261	0 70	.....	.....	.....	.....	51 16	" " " "
Blood and Bone	262	7 55	8 05	10 25	18 30	4 85	.....	Willson & Toomer, F't'zer Co, Jacksonville
Special Mixture	263	9 00	6 62	1 39	8 01	4 00	10 10	" " " " "
Special Mixture No. 3	264	5 15	3 99	6 23	10 22	4 00	8 55	" " " " "
Blood and Bone	265	5 10	9 43	7 88	17 31	5 23	.....	" " " " "
Fine Ground Bone	266	7 60	8 59	8 88	17 47	5 94	.....	" " " " "
Florida Special Pineapple Fertilizer	267	4 55	2 76	5 71	8 42	4 19	9 75	" " " " "
Cottonseed Meal	268	6 85	.....	.....	2 29	8 48	1 54	" " " " "
Special Mixture	269	7 90	8 61	0 57	9 18	....	19 66	" " " " "

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT
			Available	Insoluble	Total			
Blood and Bone, H G	270	6 85	5 02	2 44	7 46	8 03	.....	Wilson & Toomer F't'zer Co., Jack'ville, Fla.
Ideal Blood and Bone	271	5 80	8 73	7 26	15 99	5 51	.....	“ “ “ “ “ “
Fertilizer	272	8 85	10 64	1 42	12 06	1 80	4 65	H. M. Foy, Ellenton, Fla.
Raw Pebble Phosphate	273	.....	.....	.....	29 02	.....	.....	M. Sellers, Wachula, Fla.
Fertilizer	274	2 50	7 27	12 85	20 12	0 51	11 37	Schroeder & Auguinbaw, Quincy, Fla
Ashes	275	.....	.....	.....	.....	.....	1 62	Chas. R. Tysen, Jacksonville, Fla.
Tobacco Dust	276	.....	.....	.....	.....	1 97	1 76	“ “ “ “
Hog Tankage	277	8 70	5 23	2 62	7 85	12 04	.....	Cudahy Packing Co., Kansas City.
Cattle Tankage	278	7 25	7 93	7 35	15 28	6 99	.....	“ “ “ “ “
Fertilizer No. 1 (Ashes)	279	4 55	.....	.....	.....	.....	4 39	George Kuhn, Pine Castle, Fla.
“ “ 2 “	280	4 80	.....	.....	.....	.....	4 28	“ “ “ “
“ “ 3 “	281	4 00	.....	.....	.....	.....	4 40	“ “ “ “
“ “ 4 “	282	3 72	.....	.....	.....	.....	4 08	“ “ “ “
“ “ 5 “	283	7 30	.....	.....	.....	.....	4 32	“ “ “ “
Fertilizer	284	8 90	5 72	0 88	6 60	3 58	12 34	W. A. Hogan, Osona, Fla.
Cottonseed Meal	85	.....	.....	.....	.....	6 75	.....	R. B. Penton, McDavid, Fla.
Kainit	86	5 15	.....	.....	.....	.....	12 00	Frank Adams, Jasper, Fla.
Fertilizer	87	5 95	5 85	2 06	7 91	0 20	18 00	Stanyarne Burrows, Kissimmee, Fla.
Canada Ashes	88	18 00	.....	.....	.....	.....	3 55	Willson & Toomer Fert Co., Jack'ville, Fla.
Ashes	89	18 25	.....	.....	.....	.....	4 71	“ “ “ “ “ “
Ashes	290	13 15	.....	.....	.....	.....	4 23	“ “ “ “ “ “

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
H. G. Tankage	291	8 35	3 89	2 02	5 91	10 43	....	Wilson & Toomer Fert. Co., Jacksonville, Fla.
Sulphate of Potash	292	0 06	....	....	....	....	49 64	John J. Lee, Orlando, Fla.
H. W. Ashes	293	0 85	....	....	....	....	3 79	Trugate & Co., Port Ogden, Fla.
Ashes	294	18 40	....	....	....	....	1 50	J. R. Tysen, Jacksonville, Fla.
Cotton Seed Meal	295	....	....	....	....	8 34	....	J. R. Tysen, Jacksonville, Fla.
Sulphate of Potash	296	....	....	....		....	48 36	J. A. O. Kane, Pebble, Fla.
H. W. Ashes No. 1	297	....	....	....		....	2 58	H. Price Williams, Miami.
H. W Ashes No. 2	298	....	....	....	....	....	3 89	H. Price Williams, Miami.
Fertilizer No. 3	299	....	2 81	2 63	5 44	8 00	10 74	H. Price Williams, Miami.
Fertilizer No. 4	300	....	6 24	0 23	6 47	4 02	12 99	H. Price Williams, Miami.
Fertilizer	301	....	7 74	0 67	8 41	4 71	7 22	R. H. Brown, Youmans, Fla.
Fertilizer	302	....	7 23	2 28	9 51	4 11	5 48	S. E. Wiggins, Youmans, Fla.
Kainit	303	6 55	....	....	....	....	13 75	Armour Fertilizer Works, Jacksonville, Fla.
Fertilizer	304	8 20	5 64	2 94	8 58	2 73	12 99	Planters Manufacturing Co. Lake Mary Fla
Fertilizer	305	3 45	5 63	1 02	6 65	2 62	11 62	James Hicks, Lakeland, Fla.
Fertilizer	306	3 80	5 39	1 83	7 22	2 80	10 80	N. C. Peter, Lakeland, Fla.
Fertilizer	307	9 60	6 47	2 02	8 49	4 27	5 57	W. B Hicks, Lakeland, Fla.
Fertilizer	308	5 40	5 43	1 44	6 87	2 48	9 76	J. W. Richards, Gillette, Fla.
Fertilizer	309	6 30	5 20	1 60	6 80	2 60	10 76	Brown Griffin, Lakeland, Fla.
Fertilizer	310	9 58	6 64	1 91	8 55	2 19	11 07	J. E. McGraw, Lakeland, Fla.
Fertilizer	311	8 75	6 94	1 99	8 93	4 21	5 52	W. A. Merryday, & Co., Palatka, Fla.

NAME OF BRAND	Laboratory No	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insolute	Total			
Fertilizer No 1	312	6 9[illegible]	5 34	2 80	8 14	4 53	5 84	J. R. Davis, Bartow, Fla.
Fertilizer No 2	313	8 10	5 63	3 32	8 95	4 70	6 46	J. R. Davis, Bartow, Fla.
Fertilizer	314	6 65	10 79	0 35	11 14	...	21 44	. E. Berry, Manchura, Fla.
Delray Special	315	10 95	3 28	0 49	3 77	5 04	2 41	Armour Fertilizer Works Jacksonville, Fla.
Special Mixture No 1	319	9 55	6 93	2 99	9 92	3 50	6 54	Z. C. Chamblis, Ocala, Fla.
Special Mixture No 2	320	7 85	6 50	1 64	8 14	4 28	6 53	Z. C. Chamblis, Ocala, Fla.
Ground Bone	322	3 70	12 87	12 65	25 52	3 04	....	A. L. Wilson, Quincy, Fla.
Fertilizer No 1	323	....	7 82	1 31	9 13	4 07	7 61	Tampa Fertilizer Co., Tampa, Fla.
Fertilizer No 2	324	....	6 15	2 25	8 40	2 40	6 77	Tampa Fertilizer Co., Tampa, Fla.
Fertilizer No 3	325	....	8 58	1 71	10 29	1 98	15 90	Tampa Fertilizer Co., Tampa, Fla.
Blood, Bone and Potash	326	....	7 77	1 96	4 73	6 63	10 38	W. Fredrickson, Jensen, Fla.
Cotton Seed Meal	327	....	....	....	....	7 60	....	E. H. Slappy, Havanah, Fla.
Sulphate of Potash B	328	1 80	....	....	....	....	48 44	C. H. Dorman, Houston, Fla.
Fertilizer A	329	7 95	7 60	3 66	11 26	5 30	6 97	C. H. Dorman, Houston, Fla.
Fertilizer No 3	330	11 30	7 67	1 41	9 08	4 34	5 36	W. A. Merryday & Co., Palatka, Fla.
Fertilizer No 4	331	11 00	6 22	1 71	7 93	4 44	3 17	W. A. Merryday & Co., Palatka, Fla.
Cremo Brand, Cotton Seed Meal	332	....	....	....	....	4 32	....	S. L. Ditto and Co., Jacksonville, Fla.
H. G. Blood and Bone	333	....	5 86	4 46	10 32	10 43	....	Cudahy Packing Co., Jacksonville, Fla.
Fertilizer	334	....	8 23	1 20	9 43	2 55	1 80	A. L. Wilson & Co., Quincy, Fla.
Fertilizer	335	3 90	5 54	1 37	6 91	2 65	10 31	A. V. Water, Gallaway, Fla.
Fertilizer	336	7 80	6 37	1 97	8 34	4 94	8 78	C. W. Dallom, Ellenton, Fla.

NAME OF BRAND	Laboratory No	Moisture	Phosphoric Acid Available	Phosphoric Acid Insoluble	Phosphoric Acid Total	Ammonia	(Potash K20)	BY WHOM SENT
Fertilizer	337	6 00	2 39	1 86	4 16	8 41	9 99	C. F. Way, Jensen, Fla.
Fertilizer.:	338	15 75	6 56	0 66	7 22	2 46	9 36	S. L. Langford, Hyman, Fla.
H. G. Blood and Bone	339	6 00	3 64	1 64	5 28	10 87	.....	John Donk, Tallahassee, Fla.
Kainit	340	.....	.....	.....	.....	.....	12 56	W. M. Girardeau, Monticello, Fla.
Fruit and Vine Fertilizer	341	14 35	7 58	1 83	9 41	2 55	2 31	Henry Varnes, Johnstown, Fla.
Cave Earth	342	.....	.....	.....	4 60	11 70	0 90	W. D Hendrickson, Palm Beach Fla.
Fertilizer	343	10 35	9 26	1 72	10 98	1 79	14 22	J. D. Rushing Tampa, Fla.
Fertilizer No. 1	344	10 55	8 76	0 0.	8 76	6 24	9 64	A. C. Haynes, DeLand, Fla.
Nitrate of Soda No 2	345	1 60	.....	.....	.....	18 69	.....	A C. Haynes, DeLand, Fla.
Fertilizer No. 3	346	6 25	4 33	5 72	10 05	8 87	...	A. . Haynes, DeLand Fla
Indian Mound Earth	347	.....	3 26	4 56	7 82	.....	.....	H. W. Fuller, Braidentown, Fla.
Fertilizer	348	6 60	6 95	1 53	8 48	4 15	9 45	W. A. Bispham. Ellenton, Fla.
Fertilizer	349	.....	15 63	1 60	17 23	4 9	1 80	O. P. Shepherd Winter Park, Fla.
Fertilizer	350	.....	10 77	3 31	14 08	3 92	2 95	R. L. Cowart, Ona, Fla.
Fertilizer No. 1	351	.....	6 85	3 67	10 52	4 84	4 63	W W. Beney, Stuart, Fla.
Fertilizer (Leached)	352	.....	7 05	3 64	10 69	4 34	4 93	W. W Beney, Stuart, Fla.
Fertilizer	353	.....	6 60	1 81	8 41	3 42	5 45	C. M. Smith, Oxford, Fla.
Bone Black	354	.....	2 89	31 85	34 74	.....	.....	John Frey, Bona Venture, Fla
Pulverized Steamed Bone	356	7 75	13 66	10 11	23 77	3 64	.....	H. M. Sample, t. Pierce. Fla.
Fertilizer	357	3.60	8 20	4 33	12 53	4 65	6 88	James Anderson Ft Pierce, Fla
Fertilizer	358	.....	7 53	1 10	8 63	1 83	6 59	R. P. Bryan, Colman, Fla.
L. G. Blood and Bone	359	.....	7 45	3 53	10 98	6 72	.....	Cudady Packing Co., Jacksonville. Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Inso'uble	Total			
Fertilizer	360	....	8.22	4.54	12 76	1 97	10.70	J. E. Crow, Ossining, N. Y.
Fertilizer	361	12.60	6 43	2.36	8 79	2.34	8.74	Wm. E. Earle, angarine, Fla.
Canada H. W. Ashes	362	....	....	....	....	....	4 94	L. D. Klutes St. Petersburg, Fla.
Special Mixture	363	5.15	5.91	2 60	8.51	6.17	8.37	C. F. Olmstead, Ft. Pierce Fla.
Fertilizer No. 1	364	....	3.19	2 07	5.26	....	13 68	Schroeder & Auginbaw, Quincy, Fla.
Fertilizer No. 2	365	....	5.94	7.60	13.54	....	13 54	“ “ “ “
Fertilizer——	366	....	3.47	1.69	5.16		8 60	“ “ “ “
Sulphate of Ammonia	367	....	....	....	....	23 34	....	F. D. Waite, Palmetto, Fla.
Nitrate of Soda	368	....	....	....	....	17.70	....	“ “ “
Dissolved Bone	369	....	19.77	0.25	20.02	....	....	“ “ “
Acid Phosphate	370	....	14.44	5.56	20 00	....	....	“ “ “
Special Mixture	371	....	8.30	2.35	10 65	4.12	14.03	“ “ “
Nitrate of Potash	372	....	....	....	....	12.09	41.40	“ “ “
Sulphate of Potash	373	....	....	....	....		49.40	“ “ “
Special Mixture No. 2	374	13.75	7.85	0.10	7 95	3.85	11.16	“ “ “
Blood and Bone	375	....	3.23	1.97	5.20	10.05	....	A. N. Hoofnagh, Ft. Pierce, Fla.
L. G. Sulphate of Potash	376	....	....	....	....	....	26 70	“ “ “
Dark Cotton Seed Meal	377	....	....	....	1.86	4.34	1.47	Fla. Cotton Oil Co., Jacksonville, Fla.
Tobacco Dust	378	....	....	....	....	2 68	9.43	James Holmes, Jensen, Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Availab'e	Insoluble	Total			
Tobacco Dust	379	.....	.....	.....	.....	0.93	3.37	A. B. Mayer, Neptune Fla.
Special Mixture	380	.....	3.72	2.60	6 32	3.61	4.95	James Andrews Ft. Pierce Fla.
Blood and Bone	381	.....	3.44	1.58	5 02	10.51	.....	Dr. Henry Ehrlick, Ft. Pierce, Fla.
Blood and Bone No. 2	382	.....	2.83	3.89	5.72	8.98	.....	“ “ “
Potash (L. G. Su phate)	383	.....	.....	.....	.....	.....	25.74	“ “ “
Potash No. 2	384	.....	.....	.....	.....	.....	25.90	“ “ “
H. G Sulphate of Potash	385	.....	.....	.....	.....	.....	49.24	Mrs. D. Justice, Ft. Pierce, Fla.
Ground Castor Pomace	386	....	.....	.....	.....	6.22	0.47	“ “ “
Cotton Seed Meal	387	.....	.....	.....	2.29	7 08	0.80	“ “ “
Fertilizer	388	.....	8.02	1.10	9 12	3.85	9.97	C F. Wall, Seaside, Fla,
Dark Cotton Seed Meal	389	.....	.....	.....	1.87	4.53	1.48	Florida Cotton Oil Co., Jacksonvil'e, Fla.
Pineapple, Formula A	390	.....	.....	.....	1.71	4.77	1.99	R. L Goodwin, Ft. Pierce, Fla.
Pineapple, Formula B	391	.....	.....	.....	1.60	4 55	6.23	“ “ “ “
Fertilizer	392	.....	4.63	3.71	8.38	4.55	7.90	Jas. E. Andrews, Tibbals, Fla.
Fertilizer No. 1	393	.....	8.07	0.79	8.86	3 00	4.98	H. Crutcher Jacksonville, Fla.
Mixed Fertilizer No 2	394	.....	8.49	0.86	9.35	3.67	5.02	“ “ “ “
Mixed Fertilizer No. 3	395	.....	5.27	0.78	6.05	4.25	13.78	“ “ “ “
Mixed Fertilizer No. 4	396	.....	6.75	1.33	8.08	4.04	5.19	“ “ “ “

NAME OR BRAND.	Laboratory No.	Moisture.	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT
			Available	Insoluble	Total			
Mixed Fertilizer No. 5	397	.....	10.17	1.55	11.75	2.26	2.35	H. Crutcher, Jacksonville, Fla.
Mixed Fertilizer No. 6	398	.....	9.28	1.02	10.30	4.41	3.55	" " " "
Mixed Fertilizer No. 7	399	.....	10.16	0.97	11.13	1.13	1.41	" " " "
Cotton Seed Meal	400	.....	....	.....	2.36	7.27	1.71	W. A. Bours & Co., Jacksonville, Fla.
Mixed Fertilizer No. 9	401	14.10	5.61	1.14	6.75	2.55	10.88	H. Crutcher, Jacksonville Fla.
Mixed Fertilizer No. 8	402	11.90	8.28	1.41	9.67	3.06	10.75	" " " "
Loggerhead Sponge No. 1	403	.....	.....	.....	.....	1.80	.....	C. L. Huddleston, Miami Fla.
Loggerhead Sponge No. 2	404	.....	....	.....	....	1.60	.....	" " " "

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Mixed Fertilizer............	406	9.40	5.55	0.68	6.23	5.60	6.00	H. Crutcher, Jacksonville, Fla.
Baltimore Soluable Bone....	407	.....	7.44	4.32	11.76	0.57	1.03	Jossiah Ammons, Ponce De Leon.
Baltimore Soluable Bone....	408	.....	7.74	4.52	12.20	0.76	1.07	J. W. Whitton, Ponce D eLeon.
Fertilizer No. 1.............	409	12.40	10.09	5.04	15.13	2.14	1.40	H. F. Addison, Marianna, Fla
Fertilizer No. 2.............	410	14.80	12.63	3.65	16.28	0.00	0.49	H. F. Addison, Marianna, Fla
Rock Phosphate............	411	....	.....	....	33.46	....	.....	W. D. Sheppard, Irvin, Fla.
Soft Phosphate No. 1.......	412	....	.....	....	16.00	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Soft Phosphate No. 2.......	413	....	.....	....	16.82	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Soft Phosphate No. 3.......	414	....	.....	....	22.08	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Soft Phosphate No. 5.......	415	....	.....	....	29.59	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Rock Phosphate No. 6.......	416	....	.....	....	31.46	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Soft Phosphate No. 7.......	417	....	.....	....	18.98	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Mixed Pebble Phosphate....	419	....	.....	....	26.88	....	.....	E. E Hope, Tarpon Springs, Fla
Raw Bone Phosphate Rock..	421	....	.....	....	32.80	....	.....	J. F. Shuler, Coe Mills, Fla.
Cave Earth	422	....	.....	....	10.04	1.01	.....	U. D. Hendrickson, Palm Beach.
Fertilizer	423	.....	9.97	0.81	10.78	1.95	1.13	Charles E. Bazzell, Greenwood.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	424	.....	7.79	3.86	11.65	0.51	3.06	J. W. Whitter, Ponce De Leon.
Dark Cotton Seed Hulls	425	.....	.....	....	0.36	1.13	1.04	W. A. Merryday & Co. Palatka.
Cotton Seed Meal	426	.....	.....	....	.....	8.21	.....	Tallahassee C. O. Co., Tallahassee.
Cave Earth	427	.....	.....	....	10.52	2.27	.....	U. D. Hendrickson, Palm Beach.
Cave Earth	428	.....	.....	....	7.28	0.17	.....	U. D. Hendrickson, Palm Beach.
Cave Earth	429	.....	.....	....	17.76	1.19	.....	U. D. Hendrickson, Palm Beach.
Desolved Bone Black No. 1	430	.....	18.67	0.33	19.00	....	.....	The Atwood Co., Marrianna, Fla.
H. G. Sulphate of P't'sh No. 1	431	.....	.....	....	.....	....	52.50	The Atwood Co., Marrianna, Fla.
Acid Phosphate No. 100	432	.....	15.44	0.72	16.21	....	.....	Armour Fert'. Wk's., Jacksonville.
Fertilizer	433	.....	4.70	3.42	8.12	3.43	4.95	W. M. Odell, Oxford, Fla.
Tobacco Dust	434	.....	.....	....	.....	1.39	1.58	R. L. Goodwin, Ft. Pierse.
Acid Phosphate	435	8.90	16.56	1.63	18.19	....	.....	J. S. Sims. Marianna, Fla.
Special Mixture	436	5.90	4.97	2.61	7.58	7.38	10.74	R. L. Goodwin, Ft. Pierce
Mnriate of Potash	437	.....	.....	....	.....	....	51.04	Goulding Fertilizer Co. Pensacola.
Kainit	438	.....	.....	....	.....	....	13.06	Goulding Fertilizer Co. Pensacola
Export Phosphate	439	.....	18.14	1.55	19.69	....	.....	Goulding Fertilizer Co. Pensacola

For values see heading “Bureau of Fertilizers.”

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of “Special Samples” sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A “Special Sample’ sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The “Official Samples” taken by the State Chemist, or his assistant, on following pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a “Special Sample.”

R. E. ROSE, State Chemist, ANALYSIS OF FERTILIZERS, 1902, MARION G. DONK, Assistant Chemist.

Samples taken by State Chemist under Section 1, Act approved May 22 1901.

NAME OF BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Gem Fruit and Vine.....	203	Guarant'd Analysis.	5	6	1	......	2 50	10	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	8 75	7 69	0 95	8 64	3 13	11 20	
Cotton Seed Meal.......	204	Guarant'd Analysis.	......	......	.....	......	8 00	......	Florida Cotton Oil Co., Jacksonville.
		Official Analysis....	......	......	.....	......	8 1[illegible]	......	
Cotton Seed Meal.......	206	Guarant'd Analysis.	......	......	......	......	......	......	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	......	......	......	......	8 60	......	
Cotton Seed Meal.......	205	Guarant'd Analysis.	......	......	......	......	7 50	......	American Cotton Oil Co. Americus, Ga
		Official Analysis....	......	......	......	......	8 70	.....	
Cotton Seed Meal.......	207	**Guarant'd Analysis.**	......	......	.. ..	......	8 00	......	Florida Cotton Oil Co. Jacksonville.
		Official Analysis....	......	......	......	......	7 31	......	

Dark Cotton Seed Meal.	208	**Guarant'd Analysis.**	......	......	......	......	5 00	......	Florida Cotton Oil Co., Jacksonville.
		Official Analysis....	......	......	......	......	4 86	......	
Castor Pomace..........	209	**Guarant'd Analysis.**	......	......	......	......	......	......	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	......		......	......	7 00	......	
Cuke Special	210	**Guarant'd Analysis.**	7 00	5 00	2 00	......	4 00	8 00	**Standard Fert. Works, Gainesville, Fla.**
		Official Analysis....	5 10	3 53	1 81	5 34	4 23	8 16	
Corn and Cotton Special Fertilizer..............	211	**Guarant'd Analysis.**	10 00	7 00	3 00	......	1 00	5 00	**Standard Fert. Works, Gainesville, Fla.**
		Official Analysis....	4 95	7 46	4 40	11 86	1 98	4 11	
Tree Grower............	212	**Guarant'd Analysis.**	7 00	7 00	2 00	......	5 00	5 00	**Standard Fert. Works, Gainesville, Fla.**
		Official Analysis....	5 25	3 93	3 39	7 32	6 00	4 70	
No. 1, Peruvian & Fish Guano Mixture.......	213	**Guarant'd Analysis.**	10 00	5 00	1 00	......	4 50	5 00	Florida Fertilizer Man'f'g Co., Gainesville, Fla.
		Official Analysis....	8 85	5 00	2 23	7 23	4 94	5 97	
Strawberry Fruiter.....	214	**Guarant'd Analysis.**	10 00	5 00	2 00	......	2 00	10 00	Florida Fertilizer Man'f'g Co., Gainesville. Fla.
		Official Analysis....	8 50	6 91	1 68	8 50	3 16	8 06	
No. 3, Blood, Bone and Potash...............	215	**Guarant'd Analysis.**	10 00	4 00	2 00	......	4 00	4 00	Florida Fertilizer Man'f'g Co., Gainesville, Fla.
		Official Analysis....	9 25	5 66	1 72	7 38	3 98	5 11	
Goulding's Meal Mixture............	217	**Guarant'd Analysis.**	12 00	9 00	1 00	......	1 00	1 00	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 30	11 39	0 60	12 49	1 29	1 55	
Export Super Phosphate	218	**Guarant'd Analysis.**	12 00	18 00	1 00	......	......	......	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	10 70	19 33	0 44	19 71	......	......	

ANALYSIS OF FERTILIZERS—Continued.

Cotton Seed Meal.......	219	Guarant'd Analysis.	......	......	...	......	8 00	......	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	......	......	......	....	8 98	......	
Bone Compound........	223	Guarant'd Analysis.	12 00	8 75	1 00	......	2 00	1 50	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis...	11 25	8 27	5 86	14 13	2 26	1 57	
Cotton Seed Meal.......	224	Guarant'd Analysis.	......	......	......	.....	8 24	....	Georgia Cotton Oil Co., Albany. Ga.
		Official Analysis....	.....	......	......	.. .	7 76	......	
Cotton Seed Meal.......	225	Guarant'd Analysis.	....	......	......	......	8 24	....	Georgia Cotton Oil Co., Albany, Ga.
		Official Analysis....	....	......	......	......	7 93	....	
Acid Phosphate.........	226	Guarant'd Analysis.	14 00	12 00	1 10	......	......	......	Mutual Fertilizer Co., Savannah Ga.
		Official Analysis....	13 90	13 54	1 16	14 71	..	..	
Cumberland Guano.....	227	Guarant'd Analysis.	14 00	8 00	1 00	......	2 00	2 00	Mutual Fertilizer Co, Savannah, Ga.
		Official Analysis....	13 15	9 00	1 14	10 14	2 21	1 25	
Desolved Bone Superphosphate............	228	Guarant'd Analysis.	10 00	8 00	1 00	....	2 00	2 00	Cumberland Bone Phosphate Co., Portland, Me
		Official Analysis....	18 65	9 69	2 10	11 79	2 34	1 34	
Southern State Special Veg. Guano.........	229	Guarant'd Analysis.	8 00	6 00	1 00	......	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 70	6 93	0 84	7 77	4 11	6 41	
Alabama Fertilizer.....	230	Guarant'd Analysis.	....	8 50	2 00	......	2 18	1 50	Va.-Car. Chem. Co., Charleston S. C.
		Official Analysis....	10 61	8 97	2 80	11 77	2 39	1 48	
Fruit and Vine..........	231	Guarant'd Analysis.	8 09	6 00	1 00	......	2 50	10 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	8 65	7 27	0 81	8 08	2 63	10 71	

Tip Top Tomato	232	**Guarant'd Analysis.**	8 00	7 00	1 00	...	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	10 90	8 07	1 12	9 19	4 74	4 18	
Champion Compound	233	**Guarant'd Analysis.**	......	8 00	1 00	......	1 00	3 00	Va.-Car. Chem. Co., Charleston, S. C.
		Official Analysis....	14 10	9 07	1 80	10 77	0 98	4 35	
Georgia State Grange	234	**Guarant'd Analysis.**	......	8 00	2 00	...	2 00	2 00	Va.-Car Chem. Co., Savannah, Ga.
		Official Analysis....	13 43	8 77	1 49	10 16	2 57	3 42	
Georgia State Standard	235	**Guarant'd Analysis.**		8 00	2 00	.....	2 00	2 00	Va.-Car. Chem. Co., Charleston, S. C.
		Official Analysis....	13 15	8 07	4 43	12 50	1 62	1 89	
Fertilizer No. 1	236	**Guarant'd Analysis.**	10 00	5 00	2 00	......	5 00	4 00	**So. Fert. Co., Orlando, Fla.**
		Official Analysis....	9 25	7 08	5 55	12 63	4 91	3 73	
Extra Fruit and Vine	237	**Guarant'd Analysis.**	10 00	6 00	1 00	......	2 00	14 00	**So. Fert. Co., Orlando, Fla.**
		Official Analysis...	9 15	6 58	1 62	8 20	2 27	13 88	
Carey's Special for Fruit	238	**Guarant'd Analysis.**	10 00	6 00	1 00	.....	4 00	12 00	**So. Fert. Co., Orlando, Fla.**
		Official Analysis....	10 05	5 98	1 18	7 16	3 90	12 04	
Vegetable Fertilizer	239	**Guarant'd Analysis.**	10 00	6 00	2 00	......	5 00	6 00	**So. Fert. Co., Orlando, Fla.**
		Official Analysis....	10 90	5 99	1 46	7 45	4 85	5 96	
Extra Fruit and Vine (Bone)	240	**Guarant'd Analysis.**	10 00	6 00	1 00	......	2 00	14 00	**So. Fert. Co., Orlando, Fla.**
		Official Analysis....	9 60	7 16	1 63	8 79	2 38	13 90	
No. 4 Fertilizer	241	**Guarant'd Analysis.**	10 00	6 00	2 00	......	3 00	10 00	**So. Fert. Co., Orlando, Fla.**
		Official Analysis....	8 08	6 00	2 50	8 50	3 16	9 73	

Carey's Special for Fruit (Bone)........	242	Guarant'd Analysis.	10 00	6 00	1 00	......	4 00	12 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	8 90	7 30	1 44	8 64	3 98	12 83	
Fertilizer No. 2.........	243	Guarant'd Analysis.	10 00	6 00	2 00	......	5 00	10 00	So. Fert. Co., Orlando, Fla.
		Official Analysis ...	8 95	6 35	1 96	8 31	4 86	10 10	
Orange Tree Fertilizer..	244	Guarant'd Analysis.	8 00	6 00	1 00	......	2 00	10 00	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	9 50	7 22	1 91	9 13	1 97	9 23	
Ashes..................	245	Guarant'd Analysis.	......	......	......	......	......	5 50	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	4 70	......	......	......	......	3 75	
Lampat's Formula......	246	Guarant'd Analysis.	12 00	2 00	1 50	......	......	10 00	Schroeder & Auguinbau, Quincy, Fla.
		Official Analysis....	3 70	5 11	9 47	14 58	......	12 14	
Lampat's Formula No. 1	247	Guarant'd Analysis.	4 00	3 00	1 00	......	......	12 00	Schroeder & Auguinbau, Quincy, Fla.
		Official Analysis....	5 00	2 34	2 44	4 78	......	12 85	
Ashes..................	248	Guarant'd Analysis.	15 00	......	......	......	......	4 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	18 60	......	......	......	......	3 54	
Peruvian Guano........	249	Guarant'd Analysis.	15 00	8 00	18 00	......	2 50	1 00	Willson & Toomer, Fert. Co., Jacksonville.
		Official Analysis....	12 65	7 97	24 97	32 94	2 22	0 89	
Blood and Bone Fertilizer..................	250	Guarant'd Analysis.	4 00	4 00	1 00	......	4 00	10 00	Barney Hart, Jacksonville, Fla.
		Official Analysis....	7 60	5 88	3 92	9 80	1 49	6 35	
L. G. Sulphate of Potash	251	Guarant'd Analysis.	......	......	......	......	......	26 00	Barney Hart, Jacksonville, Fla.
		Official Analysis....	......	......	......	......	....	27 82	

Nitrate of Soda.........	252	Guarant'd Analysis.	......	......	......	......	......	17 00	E. O. Painter Fertilizer
		Official Analysis....	3 05	......	.....	....	......	17 88	Co., Jacksonville.
Canada H. W. Ashes.,..	253	Guarant'd Analysis.	......	......	......	.....	......	4 00	E. O. Painter Fertilizer
		Official Analysis....	......	......	......	......	......	3 93	Co., Jacksonville.
H. G. Sulphate of Potash	254	Guarant'd Analysis.	... ..	......	......	......	......	49 00	E. O. Painter Fertilizer
		Official Analysis....	.. ..	......	......	....	......	48 72	Co., Jacksonville.
Double Manure Salt.....	255	Guarant'd Analysis.	......	......	......	......	......	26 00	E. O. Painter Fertilizer
		Official Analysis....	......	......	......	......	......	26 60	Co., Jacksonville.
Blood, Bone and Potash	256	Guarant'd Analysis.	......	......	......	......	4 50	6 00	E. O. Painter Fertilizer
		Official Analysis....	5 45	8 68	2 57	11 25	4 98	6 75	Co., Jacksonville.
Gem Potato Manure....	257	Guarant'd Analysis.	10 00	4 00	1 00	......	4 00	11 00	E. O. Painter Fertilizer
		Official Analysis....	6 0	6 48	0 95	7 43	4 33	10 81	Co., Jacksonville.
Gem Strawberry Special	258	Guarant'd Analysis.	8 00	6 00	2 00	......	4 00	10 00	E. O. Painter Fertilizer
		Official Analysis....	5 60	5 62	1 03	6 65	5 54	8 03	Co., Jacksonville.
H. G. Blood, Bone and Potash................	259	Guarant'd Analysis.	......	......	.....	.....	7 00	10 00	E. O. Painter Fertilizer
		Official Analysis....	5 55	2 68	2 46	5 14	7 06	11 19	Co., Jacksonville.
Gem Orange Tree.......	260	Guarant'd Analysis.	8 00	5 00	3 00	.....	4 00	6 00	E. O. Painter Fertilizer
		Official Analysis....	6 00	4 34	3 00	7 34	5 01	6 33	Co., Jacksonville.
Gem Vegetable Manure.	261	Guarant'd Analysis.	8 00	5 00	3 00	......	4 00	6 00	E. O. Painter Fertilizer
		Official Analysis....	5 60	4 77	1 76	6 53	5 06	6 83	Co., Jacksonville.

Armour's Celery Grower	262	Guarant'd Analysis.	.....	5 00	1 00	......	8 00	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	5 70	4 71	2 34	7 05	8 40	8 11	
Armour's Lettuce Special....................	263	Guarant'd Analysis.	10 00	3 00	2 00	......	7 00	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 95	5 72	0 99	6 71	6 78	5 45	
Armour's Strawberry Fruiter................	264	Guarant'd Analysis.	10 00	5 00	2 00	......	2 00	10 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	9 65	6 49	2 40	8 89	2 50	10 90	
Armour's Orange Tree Manure...............	265	Guarant'd Analysis.	10 00	8 00	2 00	......	3 50	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	8 05	7 46	3 13	10 59	3 80	4 83	
Armour's Fruit and Vine	266	Guarant'd Analysis.	10 00	6 00	1 00	.....	2 50	11 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	8 80	5 96	1 75	7 71	2 72	10 08	
Armour's Golden Fruiter	267	Guarant'd Analysis.	10 00	6 00	1 00	......	3 50	6 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 75	7 43	2 27	9 70	3 52	7 04	
Armour's Canada Ashes	268	Guarant'd Analysis.	15 00	......	......	......	......	5 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	......	......	......	......	......	3 19	
Swift Sure Fertilizer....	269	Guarant'd Analysis.	10 00	7 00	3 00	......	2 50	10 00	M. L. Shoemaker, Philadelphia, Pa.
		Official Analysis....	8 30	8 90	3 54	12 44	2 57	10 10	
Baugh's H. G. Vegetable	273	Guarant'd Analysis.	......	6 00	2 00	......	5 00	7 00	Baugh & Sons, Philadelphia, Pa.
		Official Analysis....	13 45	7 37	1 35	9 02	4 55	7 08	
Armour's Cotton Boll..	274	Guarant'd Analysis.	10 00	8 00	1 00	.....	2 00	2 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	10 85	8 11	2 53	10 64	1 95	2 99	

Standard Ammoniated Super-Phosphate	275	Guarant'd Analysis.	......	8 00	......	......	2 00	2 00	Virginia Car. Chem. Co., Charleston, S. C.
		Official Analysis....	13 00	9 38	4 03	13 41	2 05	1 71	
Bone Compound	276	Guarant'd Analysis.	16 00	8 75	1 00	......	2 00	1 50	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 65	8 94	6 10	15 04	1 63	1 60	
Four per cent. Potash, Acid Phosphate.......	277	Guarant'd Analysis.	......	8 00	1 00	.....	......	4 00	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	14 05	12 84	1 91	14 75	....	2 41	
Acid Phosphate.........	278	Guarant'd Analysis.	......	12 00	3 00	.....		......	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 05	15 37	2 09	17 46	......	......	
Cotton Seed Meal.......	279	Guarant'd Analysis.	......	......	......	2 50	8 00	1 50	Southern Cotton Oil Company.
		Official Analysis....	...	....	......	2 06	8 24	1 70	
Dark Cotton Seed Meal.	280	Guarant'd Analysis.	.....	.....	.....	....	5 00	..	Florida Cotton Oil Co., Jacksonville, Fla.
		Official Analysis....	.....	....	......	......	4 28	.....	
Cotton Seed Meal.......	281	Guarant'd Analysis.	7 65	......	......	2 40	8 00	1 76	Lathrop C. C. Co., Hawkinsville, Ga.
		Official Analysis....	.....		......	....	8 26	......	
Cotton Seed Meal.......	282	Guarant'd Analysis.	6 50	......	......	2 00	8 00	1 00	H. H. Smith, Atlanta, Ga.
		Official Analysis....	....		.	......	8 16	......	
Tobacco Dust....	283	Guarant'd Analysis.	......	......	......	......	1 50	2 00	Eastern Tobacco Co., Richmond, Va.
		Official Analysis....	......		......	......	1 22	3 73	
Kentucky Brand H G. Tobacco Dust.........	284	Guarant'd Analysis.	10 00	.....	.....	......	3 50	5 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	......	.....	......	.	2 79	9 19	

Castor Pomace.	285	Guarant'd Analysis.	10 00	......	......	1 50	6 00	1 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	....	......	......	......	5 88	....	
Nitrate of Soda.........	286	Guarant'd Analysis	2 00	......	......	......	17 00	......	J. R. Tysen, Jacksonville
		Official Analysis....	......	......	......	......	17 26	....	
H. W. Ashes............	287	Guarant'd Analysis.	......	......	......	......	.....	2 50	J. R. Tysen, Jacksonville.
		Official Analysis....	......	......	....	.....	......	3 30	
H. G. Muriate of Potash	288	Guarant'd Analysis.	.....	......	......	.....	......	50 00	Armour's Fert. Works, Jacksonville
		Official Analysis....	.....	....	......	......	.....	47 28	
H. G. Sulphate of Potash	289	Guarant'd Analysis.	5 00	......	......	....	......	49 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......	.....	.....	.....	......	50 20	
Low Grade Sulphate of Potash................	290	Guarant'd Analysis.	5 00	......	......	......	.....	26 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......		......	......	.....	26 50	
Acid Phosphate.........	291	Guarant'd Analysis.	......	14 00	......	....	......	......	Little Brothers Jacksonville
		Official Analysis....	.....	17 00	1 76	18 76	..	.....	
H. G. Blood and Bone.	292	Guarant'd Analysis.	8 00	.....	......	7 00	10 00	......	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......	3 36	2 39	5 75	10 10	......	
Blood and Bone.........	293	Guarant'd Analysis.	9 00	6 00	8 00	.....	6 50	......	Cudaby Packing Co., S Omaha, Neb.
		Official Analysis....	......	6 62	7 26	13 88	7 23	......	
Mapes Fruit and Vine Manure...............	294	Guarant'd Analysis.	10 00	5 00	2 00	......	2 00	10 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	9 65	5 91	2 90	8 81	2 36	10 79	

Mapes Pineapple Mannre	295	Guarant'd Analysis.	10 00	4 00	2 00	......	5 00	1 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	14 45	2 87	3 68	6 50	4 99	6 25	
Mapes Orange Tree Manure..................	296	Guarant'd Analysis.	12 00	6 00	2 00	....	4 00	3 00	Mape's Formula & P. G. Co.. New York
		Official Analysis...	13 00	5 36	5 79	11 15	4 05	3 37	
Mapes Vegetable Manure	297	Guarant'd Analysis.	12 00	6 00	2 00	......	5 00	4 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	15 40	5 61	4 38	10 09	5 03	5 11	
Armour's Fruit and Vine	298	Guarant'd Analysis.	10 00	6 00	1 00	.....	2 50	11 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	9 85	8 38	1 94	10 32	2 71	9 36	
Armour's Practical Pineapple.................	299	Guarant'd Analysis.	10 00	7 00	3 00	......	3 50	10 00	Armour's Fert. Works, Jacksonville.
		Official. Analysis....	7 05	10 62	1 38	12 00	4 02	9 91	
Armou's Practical Trucker..............	300	Guarant'd Analysis.	10 00	6 00	2 00	......	3 00	10 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	8 15	6 50	4 50	11 00	3 57	8 72	
Armour's Orange Tree..	301	Guarant'd Analysis.	10 00	8 00	2 00	.....	3 50	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 25	6 99	5 89	12 88	3 84	4 49	
Armour's Vegetable.....	302	Guarant'd Analysis.	10 00	7 00	2 00	......	4 00	6 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	10 85	9 03	2 77	11 80	4 46	6 66	
Armour's Fruit and Root Crop Special..........	303	Guarant'd Analysis.	10 00	8 00	1 00		2 00	5 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	10 10	8 42	1 76	10 18	2 17	7 29	
Peruvian Guano........	304	Guarant'd Analysis.	....		......	20 00	3 50	4 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	4 90	13 08	10 32	23 40	3 85	4 54	

Florida Special Pineapple Fertilizer.	305	Guarant'd Analysis.	6 00	4 00	4 00	......	4 00	7 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	4 60	4 74	5 20	9 94	4 01	5 89	
Ideal Fruit and Vine...	306	Guarant'd Analysis.	10 00	6 00	....		3 00	10 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	8 00	7 56	0 94	8 50	3 22	10 67	
Peruvian Fruit and Vine Manure..............	307	Guarant'd Analysis.	10 00	6 00	7 00		3 00	10 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	10 65	6 84	2 44	9 28	5 10	12 35	
Special Formula for Corn	308	Guarant'd Analysis.	10 00	8 00	1 00		2 50	3 50	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	11 90	7 81	1 27	9 08	2 25	5 25	
Ideal Fertilizer.	309	Guarant'd Analysis.	8 00	5 00	1 00	.....	4 00	6 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	9 50	6 31	1 30	7 61	4 00	6 99	
Special Mixture No. 1...	310	Guarant'd Analysis.	8 00	6 00	1 00		5 00	5 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	7 90	6 26	1 61	7 87	5 06	5 70	

EXPLANATORY.

This Bulletin contains the law as now revised concerning fertilizer, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal.

I have given marginal notes of subjects treated in different Sections for convenience.

Special attention is called to the duties of Sheriffs in Section 3 of the Act of 1901.

Manufacturers will please note that they are required to file in *this* office annually their oath of analysis. See Section 5. Parties not having filed same during this year will please comply at once. Blank forms will be furnished upon application to this office

The present law leaves no longer any doubt as to cotton seed meal being subject to the requirements of a fertilizer as to analysis, tag and stamp tax.

Section 8 of the Act of 1901, specifically explains how to order stamps. On application, I will furnish printed forms in ordering stamps in compliance with the present law Stamps will be furnished in the following denominations of weights, to-wit:

One hundred, one hundred and twenty five, two hundred and two hundred and fifty pound packages.

Manufacturers will please have their goods conform to these weights, or complements of these weights. To illustrate: A one hundred and a one hundred and twenty-five pound stamp placed on a two hundred and twenty-five pound package will meet the demands of the law. Parties using packages of fractional weights must lose the difference in ordering stamps.

Consumers of the goods herein described will find in Section 9 of the Act of 1901, what is required to properly take samples for analysis by the State Chemist. Citizens of the State are entitled to have samples analyzed free of cost.

No consumer should purchase a package of fertilizer or cotton seed meal that does not bear its analysis, plainly printed, and the stamp showing the number of pounds the tax has been paid on. You purchase such goods at your own risk with no guarantee that it is not a fraud. When the guarantee is on the package you can send sample to this office and know if your goods come up to the guarantee. This Department is ready to aid you if you will use the law to protect yourself. I certainly expect the Sheriffs of the different counties of this State to assist in protecting their people as the law requires them to do, in Section 2 of the Act of 1901.

B. E. McLIN,
Commissioner of Agriculture.

Compilation of Laws

RELATING TO

Inspection, Analysis, Manufacture and Sale of Fertilizers, Cotton Seed Meal, etc., in this State.

891. APPOINTMENT OF STATE CHEMIST.—The Governor shall appoint a State Chemist, who shall hold his office for the term of four years, and until his successor is appointed and qualified; he shall be an expert chemist, and have his office at the Capital of the State of Florida, and his duties shall be such as hereinafter provided. The Governor may appoint an assistant to the State Chemist when necessary. Approved June 2, 1893.

904. CHEMIST TO REPORT TO GOVERNOR.—The State Chemist shall make quarterly reports to the Governor of the number of certificates rendered by him to the Commissioner of Agriculture. (Revised Statutes.)

908. ANNUAL REPORTS TO GOVERNOR.—He shall also make a report of the operations of his office to the Governor of the State annually, giving the number of analysis made, the amount and proceeds of his office, said report to be presented to the Legislature at its bi-ennial sessions in the same manner as the Auditor's and State Treasurer's reports are made. (Revised Statutes.)

909. PENALTY FOR FALSE ANALYSIS.—In case the State Chemist wilfully make sany false or untrue analysis, he shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in a sum not exceeding one thousand dollars ($1,000), and shall stand committed until such fine is paid. (Revised Statutes.)

910. COMPENSATION OF CHEMIST AND ASSISTANT.—The State Chemist shall receive a salary of two thousand dollars ($2,000) per annum; the Assistant Chemist, who shall be also Fertilizer Inspector, shall be paid eighteen hundred dollars ($1,800) per annum. (Act of June 2, 1893.)

Act of Legislature 1901, Approved May 22, 1901.

AN ACT to Provide for the Inspection and Analysis of and to Regulate the Sale of Commercial Fertilizers, Manurial Chemicals, Cotton Seed Meal, Castor Pomace, Tobacco Stems, Tobacco Dust or Tobacco Meal, in this State; to Prohibit the Sale of Fraudulent or Adulterated Commercial Fertilizers, Manurial Chemicals, Cotton Seed Meal, Castor Pomace, Tobacco Stems, Tobacco Dust or Tobacco Meal; to Fix Penalties for the Violations of the Provisions of this Act, and to Provide for the Collection of a License or Inspection Fee from the Manufacturers or Dealers in Commercial Fertilizers, Manurial Chemicals, Cotton Seed Meal, Tobacco Stems, Tobacco Dust or Tobacco Meal, and to Repeal All Laws or Parts of Laws in Conflict Wtih this Act.

Be it Enacted by the Legislature of the State of Florida:

Powers given to inspect under supervision of the Commissioner of Agriculture.

Section 1. The State Chemist and the Assistant State Chemist shall be Inspectors of Fertilizers; they shall be under the general direction and supervision of the Commissioner of Agriculture.

Duties of State Chemist.

Sec. 2. It shall be the duty of the State Chemist to analyze samples of fertilizers that may be offered for sale in this State and for this purpose he is authorized and directed to take or have taken by the Assistant State Chemist from any brand of fertilizers offered for sale in this State, from not less than ten original packages of said fertilizers which may be in the possession of any manufacturers, dealer or person using the same, two samples not to exceed one pound each in weight, one sample to be retained by the State Chemist and the other sample to be sent in a sealed bottle or can, to the Commissioner of Agriculture, who shall keep the same. And in case any manufacturer shall request another analysis, then the sample retained by the Commissioner of Agriculture, at the request of any manufacturer, shall be sent to any Chemist to whom the Commissioner of Agriculture, State Chemist and manufacturer shall agree upon.

Rights of manufacturer to second analysis.

Requirements of analysis to be on packages.

Sec. 3 Every bag, barrel, or other package of commercial fertilizers. cotton seed meal, castor pomace, tobacco stems, tobacco dust, or tobacco meal manufactured, sold in, or imported into this State, shall have securely attached or labeled, and plainly stamped thereon, the number of net pounds of fertilizer in the package, the name, brand or trade mar kunder which the fertilizer is sold, the name and address of the manufacturer and the chemical analysis, stating the percentage of ammonia, and the source from which the same is derived, the percentage of potash soluble in water, the percentage of available phosphoric acid and the percentage of insoluble phosphoric acid, the percentage of moisture contained therein, also the maximum percentage of chlorine therein, and all other ingredients from which it is compounded, also the stamp showing the payment of the license fee provided for in this act.

Duties of Sheriffs.

The Sheriffs of the counties of this State are hereby authorized, and it is hereby made their duty, to seize and sell at public sale, each and every bag, barrel or package of commercial fertilizer, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal manufactured, imported into or sold in this State, which shall not have securely attached the tag or label and stamp mentioned in this section; Provided, That should the owner show to the satisfaction of the Sheriff that such tag or label or stamp had been attached and the same had become detached, the Sheriff shall release the same without cost to the owner.

Cannot ship in bulk to consumers.

Manufacturers can ship in bulk to each other.

All fertilizer shipped in bulk to the consumers shall be subject to penalties provided for in this section upon the attempt to evade the payment of such tax; Provided, That nothing in this act shall be construed to restrict or avoid sales of acid phosphate, kainit or other fertilizer material in bulk to each other by importers, manufactuerrs or manipulators who mix fertilizer material for sale, or as preventing the free and unrestricted shipment of these articles in bulk to manufacturers or manipulators who mix fertilizer material for sale. All moneys or proceeds derived from the seizure and sale of fertilizers shall be covered into the State treasury.

Penalties for misrepresenting true analysis.

Sec. 4. Any manufacturer or dealer who shall misrepresent the proportion of ammonia and the sourc ethereof, phosphoric acid and potash, or other ingredients contained in such fertilizers, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined five hundred dollars for the first offense and one thousand dollars for each subsequent offense.

Oath of analysis to be filed with Commissioner of Agriculture annually.

Sec. 5. Any manufacturer or importer of or agent for the sale of commercial fertilizers, previous to offering the same for sale in this State, shall file ith the Commissioner of Agricultuer annually a paper giving the name of his principal agent or agents in the State of Florida, also the name and guaranteed analysis, under oath, of the fertilizer or fertilizers offered for sale by him, and any manufacturer, importer or agent who shall refuse to give the information herein reuqired shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined five hundred dollars for each offense.

Penalty for non-payment of tax.

Sec. 6. Every manufacturer, importer, agent or seller of any commercial fertilizer, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco mel, shall pay to the State Treasurer a fee of twenty-five cents for each and every ton offered for sale in this State; Provided, That when the manufacturer or importer shall have paid the fees herein required for any person acting as agent or seller for any manufacturer or importer, such agent or seller shall not be required to pay the fee named in this section; and any manufacturer, importer or dealer, who shal fail to pay the tax provided in this section shall be guilty of a misdemeanor, and upon conviction thereof shall be fined one hundred and fifty dollars for the first offense and two hundred and fifty dollars for each subsequent offense.

Stamps furnished by Commissionor of Agriculture.

Sec. 7. It shall be the duty of the Commissioner of Agriculture to furnish the manufacturers, importers or dealers with stamps or labels to be attached by the manufacturers to each package of fertilizer sold or used in this State, which stamp or label shall be accounted for by the Commissioner of Agriculture in his monthly reports to the Governor; such stamps shall be printed in such form as may be prescribed by the said Commissioner of Agriculture.

How to apply for stamps.

Sec. 8. Each manufacturer and importer of or dealer in fertilizers, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal, shall forward the money for fertilizer stamps or labels with his letter of request, directed to the State Treasurer. Said letter of request shall contain the statement of tons of fertilizers for which stamps or labels are required and the number of packages contained in each ton. The State Treasurer shall hand to the Commissioner of Agriculture the letter of request for fertilizer stamps or labels, which order shall be filled by the Commissioner at once, if found correct.

How citizens may apply to have goods analyzed.

Sec. 9. Any person purchasing any fertilizer from any manufacturer or vendor in this State for his own use, such person being a citizen of this State, may submit fair samples of said fertilizer to the Commissioner of Agriculture for analysis. But in order to protect the manufacturer or vendor from the submission of analysis of spurious samples, the person selecting the same shall do so in the presence of to or more disinterested persons, which samples shall be taken from one or more packages and bottled, corked and sealed in the presence of said witnesses, and this sample package or bottle placed in the hands of disinterested person, who shall forwar dthe same, at the expense of the purchaser, to the Commissioner of Agriculture, when the person so desires; and upon the receipt by him of any such sample package, the Commissioner of Agriculture is hereby authorized to require the State Chemistto analyze the same, and he shall return to such purchaser or purchasers a certificate or certificates of analysis. The certificate shall in all cases set forth the component parts of said fertilizers, with their respective qualties, date of analysis and name or names of persons submitting the samples, and to be signed by the State Chemist, who is hereby required to keep an accurate account of the same, and the said certificate or record, when verified by the affidavit of the State Chemist, shall be competent evidence in any court of law or equity in this State.

Damages, how recovered.

Sec. 10. Any person purchasing any fertilizer or fertilizing material from any manufacturer or vendor who shall upon an analysis by the State Chemist, discover that he has been defrauded, by reason of adulteration or deficiencies of constituent elements, either in quality or in the fertilizing materials so purchased, shall recover in any action he may institute, upon proof of the fact, twice the amount paid to or demanded by the manufacturer or vendor for the fertilizer or fertilizing material so purchased. But in all cases where the vendor is an agent of the manufacturer, or sub-agent of such agent, the judgment of the court shall be rendered against the manufacturer. In case any purchase be made of any manufacturer or agent of any person or persons residing out of the State of Florida, manufacturing, compounding or furnishing for sale, any such commercial manure or manufactured fertilizer, cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal, the purchaser thereof, may, at his option, proceed by attachment, as now provided by law, in case of non-resident and absconding debtors, against any such property, rights or credits of any person or persons selling, manufacturing, compounding or furnishing said manures or fertilizers, when such property, rights or credits can be found within the limits of the State.

Definition of materials subject to this act.

Sec. 77. The term commercial fertilizers as used in this act, shall be taken to mean all substances containing nitrogen, potash, or phosphoric acid; also cotton seed meal, castor pomace, tobacco stems, tobacco dust or tobacco meal, sold, offered or exposed for sale and ordinarily used for manurial purposes, excepting barnyard or stable manure and crude cotton seed.

Materials not allowed sold except under these conditions

Sec. 12. No person shall sell or expose for sale in this State any pulverized leather, hair or wool waste, raw, steamed, roasted or in any form, as a fertilizer or as an ingredient of any fertilizer or manure, without an explicit printed certificate of the fact, said certificate shall be conspicuously affixed to every package of fertilizer or manure, and to accompany or go with every parcel or lot of the same. A failure to comply with the provisions of this section shall be deemed a misdemeanor, and upon conviction the seller thereof shall be fined one hundred dolalrs for the first offense and two hundred dollars for each subsequent offense.

What the State Chemist is required to furnish analysis of.

Sec. 13. The State Chemist, upon application, shall furnish at any time to an applicant a full analysis of any brand of fertilizer required. Said analysis shall set forth the percentage of ammonia, potash soluble in water, of available and insoluble phosphoric acid, with the statement of the commercial value of each ingredient, which valuation shall be uniform and not above the real value of such ingredient.

Traveling expenses paid

Sec. 14. The actual traveling expenses of the State Chemist and his assistant incurred in the execution of this law and inspection of fertilizers, shall be paid on proper vouchers approved by the Commissioner of Agriculture; Provided, Such expenses shall not exceed $750.00 per annum, and the Comptroller is hereby authorized to issue his warrant for the payment of the same out of any funds in the Treasurer's hands derived from the sale of fertilizer inspection tags or stamps.

Commissioner of Agriculture has power to regulate.

Sec. 15. The Commissioner of Agriculture shall have the authority to establish such rules and regulations in regard to the inspection, analysis and sale of fertilizers, chemicals and cotton seed meal not inconsistent with the provisions of this act, as in his judgment will best carry out the requirements thereof.

Sec. 16. All laws and parts of laws in conflict with this act are hereby repealed.

Sec. 17. That this act shall take effect immediately after its passage and approval by the Governor.

Approved May 22, 1901.

PART IV.

MISCELLANEOUS

STANDARD COMMERCIAL FERTILIZERS

Made by Reputable Manufacturers, Compared to Irregular, Unknown Makers, or Brands.

There has been some considerable complaint this season from the cotton growing counties, of the failure to obtain satisfactory results from the use of certain "Guanos," or "Ammoniated Bone," etc. On examination, analysis and inquiry, these goods have been found to be low grades, made by some concern not generally known to the State, with no local habitation, and no State representative. Their guarantee is the ordinary cotton goods guarantee—10-1-1 or 8-2-2. Seldom do they analyze even these small amounts of fertilizing elements

This fraud is hard to prevent, and, without the hearty co-operation of the consumer, impossible to detect. A few tons are sold in a locality by glib tongued agents, or by circulars. The goods are applied, failure results, and after the damage is done, the Department is requested to assist in collecting damages. This could be readily done provided the goods were not as represented, and the manufacturers represented in the State by a reliable agent. This is seldom the case. The agent is not to be found, and no recourse is to be had.

The advice always given to consumers is to purchase only those goods made by well known manufacturers, who have factories or well known agencies located in the State.

No State has better facilities for procuring first-class commercial fertilizers than has Florida. Her factories at Pensacola, Quincy, Gainesville, Jacksonville, Orlando and Tampa are well equipped, and turn out any class of goods desired, at fair prices and with full guarantee as to quality.

There are also agencies of standard well-known manufacturers of other States located in the various cities of the State, handling none but first-class goods, sold on full guarantee, with ample responsibility to protect the same.

There is no excuse for purchasing low grad or inferior goods of unknown or irresponsible parties. As a rule such goods are inferior and sold at higher proportionate prices than standard manufactures.

All reputable manufacturers publish a catalogue and price list of their goods recommended for various crops. These can be had for the asking (and frequently also contain valuable agricultural and other information besides.)

By using ordinary diligence, care and business methods, there is no reason why inferior or fraudulent goods should be used by our farmers.

Buy only those goods made by well-known, reputable and responsible makers. If the goods then prove not to be as represented, damages can be collected. If, however, the goods are from some practically unknown source, with no local habitation and no responsibility, it is practically impossible to obtain redress.

R. E. ROSE, State Chemist.

SPECIAL NOTICE.

The attention of persons sending samples of fertilizers for analysis is called to the following:

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER SAMPLES TO THE COMMISSIONER OF AGRICULTURE. —SECTION 15 OF LAW.

Special samples of fertilizer sent in by purchasers, under Sec. 9 of the law approved May 22, 1901. Shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed and a FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICTLTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN OR BOTTLE WILL BE ACCEPTED FOR ANALYSIS This rule is adopted to secure fair samples of sufficient size to make the six recessary determinations, viz: Moisture, available and insoluble phosphoric acid, ammonia and potash; and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means, of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

COPIES OF THE FERTILIZER LAW.

Citizens interested in the fertilizer law of the State, and desiring to avail themselves of its protection, can obtain a copy free of charge by sending for same to the Commissioner of Agriculture.

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FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

JANUARY 1, 1904.

B. E. McLIN
COMMISSIONER OF AGRICULTURE.
TALLAHASSEE, FLORIDA.

Part 1—Vegetable Crops.

Part 2—Bulletin on Velvet Beans.

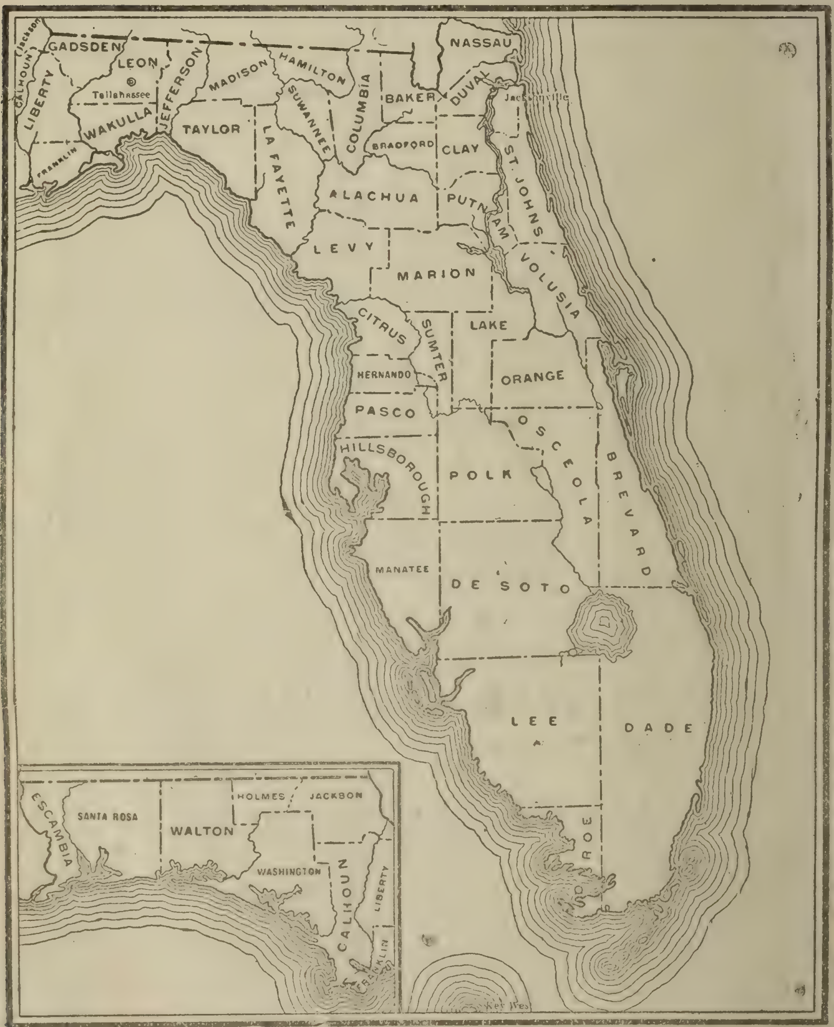
Entered January 31, 1903, at Tallahassee, Florida, as
second-class matter, under Act of Congress.
of June 1900.

These Bulletins are Issued free to those requesting them.

TALLAHASSEE, FLA..
I. B. HILSON, STATE PRINTER.

County Map of the State of Florida.

(For the Bulletin.)



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PART I.

VEGETABLE CROPS.

The object in getting out this Bulletin is for the purpose of obtaining some definite and reliable information concerning the acreage planted in fall and early winter vegetables, as distinguished from the acreage planted in similar crops in early winter and spring; several of the crops that are shipped to market throughout the winter and early spring, must necessarily be planted in the fall, hence, the reason for seeking information as indicated. It is gratifying to note the substantial increase in acreage of several of the best paying crops, which we take to indicate that their production has proven profitable in the past.

We direct attention to that portion of the table giving the estimate, by counties of the orange crop for the present year. These estimates represent eighteen of the twenty orange producting counties, those that grow them on a commercial scale; we have been unable to get direct reliable information from either of the two counties of Lake and Hernando. We are quite sure that several of our correspondents are rather too conservative in their estimates, while one or two are probably somewhat liberal in their figures; according to the estimate reported for the counties named in table, by our correspondent, the total crop will be 1,501,300 boxes, but if we take credit for the two counites not represented, and allow a deserved and moderate increase in three or four others we can easily add 125,000 boxes to these figures; but we also feel that there should be a reduction in the estimates of some counties, which will aggregate say 50,000 boxes; to equalize these differences we will add to our total as per table 75,000 boxes, which we consider quite fair, and we have as the total crop for this year 1,576,300 boxes. We do not believe the crop will fall below this estimate, nor that it can possibly exceed 1,600,000 boxes.

We beg to warn our growers against excessive estimates of the crop; it can only do harm by cutting down values, which it will be too late to correct when the truth is known; likewise short estimates will finally react, and the producer loses, not the buyer. A proper distribution of this season's crop gradually marketed, should yield to the growers of the State not far from $4,000,000.

REPORT OF ACREAGE OF FALL AND WINTER VEGETABLES UP TO JANUARY 1ST, 1904, INCLUDING ESTIMATE OF ORANGE CROP FOR 1903.

COUNTIES	Tomatoes	English Peas	Cucumbers	Beets	Turnips	Cabbages	Pineapples	Strawberries	Celery	Lettuce	Orange Crop
	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	No. of Boxes
Alachua....	90	60	100	70	50	100	....	40	60	100	1.000
Brevard....	100	100	100	100	150	120	....	....	200	150	30,000
Citrus.......	...	50	....	100	100	110	....	....	....	90	2,000
Columbia...	...	75	....	75	100	75	...	100	....	100	....
Dade, ...	125	....	....	....	....	100	110	....	....	....	3,000
DeSoto.....	110	105	110	100	120	110	100	100	110	100	350,000
Hillsboro...	100	80	110	120	110	120	70	60	90	100	350.000
Lee........	100	100	110	110	120	100	125	150	100	110	50,000
Levy........	25	25	25	50	50	60	....	....	...	50	300
Manatee....	120	100	120	100	120	120	150	200	200	200	250,000
Marion.....	110	100	100	100	100	110	100	100	105	110	35,000
Orange.....	125	110	25	110	115	25	115	25	115	115	150,000
Osceola.....	50	80	50	80	100	100	150	100	100	100	78,000
Pasco......	100	150	50	100	100	150	25	125	50	100	15,000
Polk........	100	110	100	110	100	120	....	80	50	100	150,000
Putnam..	...	....	....	....	....	....	....	...	....	....	10,000
St. Johns...	...	....	....	....	...	100	....	....	....	....	2,000
Sumter......	90	100	80	90	100	100	....	80	...	75	15,000
Volusia.....	...	....	....	....	...	....	100	...	100	....	10,000
Gen. aver'ge	96	90	83	94	102	101	104	97	107	107	1,501,300

PART II.

BULLETIN ON VELVET BEANS.

THE VELVET BEAN.

The Velvet Bean is comparatively a new crop in Florida, having been first experimented with in 1896; thorught it was in all probability cultivated as a trellis vine and shade for porches in the warm season. The writer remembers having seen as far back as 1875, in Alachua county and also in Marion, what he has since recognized as the Velvet bean; on both occasions it was growing in young orange groves, and the owners complained of the difficulty of keeping it from smothering, or choking the young trees; with that exception they were even at that time greatly pleased with it as a green cattle food; its threatening danger of groves prevented the extensive cultivation, and little was thought of it; its origin had never been precisely fixed, and at the period referred to it was not known by any particular name.

The principal uses of the Velvet Bean are as a renovator of worn soils, and as a stock food for farm animals, in which case it has been demonstrated to be of great value either as a forage crop or fed green, either cut or pastured. At present the climate of Florida seems best adapted to its cultivation because of the long season, but there is little doubt that in a few years its cultivation will be gradually extended further north: while it will probably mature seed better in a climate like our's, still for the purpose of soil renovating it is not absolutely necessary that it produce seed; though it is true that the nearer the plant approaches perfection, the greater is its value for the purpose intended. The Velvet Bean, like most legerminous plants has the peculiar faculty of increasing the fertility of soils, while at the same time it yields the omst nutritious of food crops. Velvet Beans are known to thrive on lands that other crops positively perish on, and two crops of the beans on such lands have been known to increase its productive capacity to the equal of cow penned land. It has been demonstrated by experiment, that one acre of Velvet Beans including the vine, pods and roots contain about 190 pounds of nitrogen, 240 pounds of potash and 40 pounds of phosphoric acid; the actual value of these ingredients being about $40.00.

But it is as a feeding product for live stock, either alone, green, or as a dry forage, or in combination with other products, that it will be mostly valued, in fact every experiment along this line and they are numerous, has clearly demonstrated its great superiority as a food product.

In an article, discussing the many valuable characteristic of the plant, Prof. Norman Robinson, former State Chemist, writes: The one great merit of the velvet bean inw hich it distances all competition, is the enormous amount of vine growth, which it is capable of making in a single season. I am not aware that any direct and positive experiments have ever been made to test its comparative productiveness. As the result, however, of several year's observation of the growth of the velvet bean, side by side with the cowpeas, I should say, that it is a very conservative estimate to assume thatt he former will make twice the weight of vines which the most vigorous variety of the latter can produce. This is such a direct and positive advantage as to place the former in a distinct class by itself.

As might be anticipated, the velvet bean, like other members of the same family, is exceedingly valuable as a gatherer of atmospheric nitrogen. If it had nothing else to recommend it, this property, coupled with its enormous productiveness, would commend it to the attention of farmers and fruit growers. But this is not the only thing, probably not the most important thing for which the velvet bean is valuable. All progressive agriculturists are aware in a general way, that humus is a valuable soil constituent. The vital importance of this ingredient to successful plant growth is, however, not always understood. A few words concerning the various offices which humus fulfills in the economy of plant growth may render its importance more clear.

With the aid of appropriate fertilizers in a liquid form, it is possible to grow many plants on pure sand. The experiment is always a difficult one and requires constant watchfulness, experience and skill. All food is taken up by plants in solution; water must be continually present. The process of plant life permits no interruption. Animals eat and drink at intervals; growing vegetables eat and drink all the time. A few hours, in some few moments of absolute cessation of this process of root absorption would be fatal. Indeed the number of plants that without grave disaster can endure for an hour to have their roots perfectly dry, is comparatively limited. Now nature has provided for exactly this contingency; even pure sand will retain moisture for a limited period. If it is mixed with clay and oxide of iron. its power of keeping moist is greatly increased. But the one thing which above all others tends to prevent the drying out of the soil is humus. It is so retentive of moisture that it is impossible to render it absolutely dry except by special and artificial means. It is not difficult to understand. therefore, why a soil, deficient in humus, is seldom productive, however well it may be supplied with the needed elements of plant food.

There are a number of other added benefits which a sufficient supply of humus confers upon a soil, such as its more complete areation and the consequent greater production of carbonic acid. The added stimulus which it somehow gives to the nitrogen assimilating bacteria of legumes and the more rapid development of all root growth, these and other advantages that might be named, certainly give to dead and decaying vegetable matter an importance as a necessary soil constituent, which it is hardly possible to over-estimate.

It is therefore not merely as a nitrogen producer but as a humus producer that the velvet bean takes rank so far above any known legume; of course with all these advantages there are some drawbacks. If planted in an orange grove and left to its own rampant and vagrant manner of growth, it will climb over everything, trees included. This tendency must, of course, be repressed. The writer has seen orange trees greatly injured, in fact almost strangled, by this merciless exponent of this "strenuous" type of vegetable life. A little attention at the right time will remedy this.

Then, too, it is important not to make the mistake of supposing that the velvet bean is a complete fertilizer. It is nothing of the kind. An orange grove fed only on velvet beans will soon starve the grove and its owner both. Not less than 600 pounds of superphosphate and from 100 to 150 pounds of sulphate of potash should be given to every acre of grove in which this soil renovator is expected to do its work.

To obtain the best results the immense mass of vegetable matter which the velvet bean produces should be allowed to become dead and withered and somewhate dried before it is plowed under. The danger of deleterious acid fermentation being set up is a very serious one.

Rightly managed, however, I consider the velvet bean one of the most important soil renovators and soil improvers that has ever been introduced into Florida.

The following descriptive article is from the Lake City Station Bulletin by Prof. H. Harold Hume concerning its botany as also the feeding properties with tabulated results of experiments: Mucuna utilis (Wallich) Velvet Betans.—A twining vine frequently upwards of 75 feet in length, stem branching, smooth and rather slender. Leaves trifoliate, leaflets rombicovate or broadly ovate, acute at the apex, rounded at the base, four inches long, two and one-half inches wide. Lateral ones inequilateral, pedicle four inches in length, stipules and stiples inconspicuous; inflorescence axillary racemose drooping, frequently a foot or more in length; flowers in groups of three at a point, groups arranged spirally, three to thirty flowers in the raceme; pedicles short, calyx greenish changing to gray in fruit, corolla deep purple, standard short and blunt, wings about twice as long as the standard, narrow and blunt, keel whitish purple, closely surrounding the stamens; Legumes three inches long, five-sixteenths inch thick, five-eights inch wide, falcate, roundish and constrioted slightly between the seeds, blunt covered with a dark velvety pubescence, whence the common name; seeds nine-sixteenths to five-eighths of an inch in length, five-sixteenths inch thick, seven-sixteenths inch wide, rather oblong in outline, marked and spotted with brown and dirty white, hilum about one-fourth inch in length, elevated and distinctly marked. The plant is a native of India, introduced into America by the United States Department of Agriculture about twenty-five or thirty years ago.

Nodules one-eighth to one and one-fourth inches in diameter, brownish black, tuberculate broad, flat, about one-eighth to one-fourth inch in thickness, interior greenish or pinkish green.

VELVET BEAN CULTURE.

The velvet bean requires a long season in order to mature the seed; therefore, its cultivation will be confined to sections where the growing period is fully eight months. It will do well and mature the seed in Florida and the southern part of the Gulf States. The plant grows well as far north as Tennessee, but beyond southern Georgia it is necessary to purchase seed each year for planting.

In Florida the planting should be done in March or April. The quantity of seed to be used for planting an acre may be varied from one to two bushels. The planting may be broadcast yet it is better to plant in rows about four feet apart leaving a space of from one to two feet in the row. This admits of cultivation until the plants are well established and aids in freeing the land from objectionable wëeds and grass, and so the resulting forage will be much better than otherwise. After the velvet bean obtains possession of the soil it shades the ground so completely that other plants are crowded out. If the soil is very thin it is well to supply some potash and phosphoric acid; the quantity to be added depends upon the condition of the land and the crop which is to follow the velvet bean. One hundred pounds of sulphate of potash and two hundred pounds of acid phosphate should prove ample in most cases.

Since the bean is a leguminous plant it is not necessary to add any fertilizer containing nitrogen, but unless the land has been previously planted with velvet bean the following procedure should be carried out, where possible, in order that a good crop may be obtained the first year. Secure a quantity of soil, equal to the amount of seed to be planted, from a field which has recently produced a crop of velvet bean, and just previous to planting moisten the seed and mix it with this soil. In this way the field is supplied with micro-organisms which are necessary for th enormal development of the velvet bean. Harvesting the vine is attended with some difficulty on account of the great mass of matter and the tangle caused by the extreme length of the vine. A mowing machine with the blade directly in front of the machine between the wheels has been used at the Station with satisfactory results yet this may be further improved by placing a colter just in front of the blade on each side of the machine.

In curing the hay the same process is followed as in preparing hay from peavines. Let the vines wilt on the ground about forty-eight hours, then place in small cocks and let it cure for several days. The danger from heating is somewhat less in the case of peavines as the mass does not pack so closely though it is well to take precaution in the matter and not make the pile too large while curing. Care must also be exercised to avoid the leaves dropping off and to accomplish this the vines must be placed in the cocks before the leaves become withered. After a little practice one can determine when the vine is sufficiently wilted.

USES OF THE VELVET BEAN.

We will briefly mention the uses to which this plant may be put and afterwards consider these more in detail.

The first and most important use to which the velvet bean may be applied is perhaps that of soil renovation. In Florida much of our land is abundantly supplied with humus or organic matter and nitrogen, though it is equally true that the greater portion of the Florida soils is very deficient in these important substances. The velvet bean can accomplish for these poor soils of Florida what the cowpea can do for all the southern states. For us, however, the velvet bean has greater advantages and is to be preferred. Under the head of culture it has already been indicated that the plant is an excellent one from which forage may be obtained. It may be used as green pasturage, harvested and converted into hay, or cattle and hogs may be turned in after maturity and the crop thus converted into meat at low cost. It has been used by some as a cover crop and as such proved satisfactory. The pods after grinding furnish a food rich in protein that is relished by poultry, cattle and hogs. This food is now on the market in some parts of the state. For many years it has been used as an ornamental and as such is still high favor.

VELVET BEANS AS A SOIL RENOVATOR.

The velvet bean derives its nitrogen from the air. This power is not common to all plants but is confined to the plants known as the legumes, and is made possible through the agency of micro-organisms which live on the roots of these plants and by some obscure process convert the nitrogen of the air into a form available to the plant in which it is stored up. Nodules varying in size are produced on the roots of these plants by these bacteria.

The roots and stubble contain a considerable portion of the nitrogen obtained from the air and as they are left in the soil decomposition gradually takes place and the nitrogen thus becomes converted into a form that is available to those plants which do not have the power of obtaining a supply directly from the atmosphere. The whole of the nitrogen obtained from the air by a crop of velvet beans is by no means left in the roots but the greater portion of it is stored up in the leaves, vine, and seed, though the soil gains much of this from the leaves which are shed by the plant. If so desired the entire plant may be left to decay on the surface and turned under the following spring, but, it is not advisable to turn under the green vine as it will cause the land to become sour and this will have to be corrected by an application of lime. It is not even profitable to let the plant die down on the surface and subsequently turn it under, inasmuch as the hay which may be made from the vine is much more valuable as a food than the vine is worth as a fertilizer. Besides if properly managed the fertilizing constituents of the hay may, to a large extent, be saved in the form of manure. In order to form an estimate of the quantity of nitrogen which may be procured from the air through the use of the velvet bean, the root from a vine was carefully removed from the soil, dried, weighed and analyzed. The results were then calculated to the basis of one acre. It was found that on one acre six hundred and ninety pounds of dried root would be produced. This root contained 1.41 per cent. of nitrogen, so from the root alone 9.7 pounds of nitrogen would be added to an acre of ground.

This could not be considered a fair index to the weight of nitrogen added, in as much as, most of the nodules had already decomposed when the root was collected and the nitrogen from these is not included in the estimate. The quantity of nitrogen was also estimated which was removed in the hay from an acre.

Weight of green vine on an acre, 21,132 pounds.

Weight of dry hay, 5,953 pounds.

Percentage of nitrogen in hay, 2.21.

Weight of nitrogen in hay, 131.5 pounds.

In this way it is shown that a crop of velvet beans on one acre, after yielding three tons of hay, supplies 9.7 pounds of nitrogen to the soil, a quantity which is usually sufficient for the following crop. If on the other hand the hay is turned under after drying, an acre of land would have its nitrogen increased by 141.2 pounds. It would then be unnecessary to add nitrogen to land so treated for several years. The entire amount of nitrogen saved in this manner represents a cash value of from fifteen to eighteen dollars. Similar investigations have been carried out by Dr. W. C. Stubbs and C. E. Moores at the Louisiana Station; also by J. F. Duggar and Dr. J. T. Anderson of the Alabama Station. The results obtained in the three different states are given here in tabular form, and while considerable variations exist this is to be somewhat expected since the conditions must have been very different. These results show very conclusively that the velvet bean is a valuable plant for restoring nitrogen and humus to our impoverished soils.

	Ala.	La.	Fla.
Weight of green material from an acre	19040	22919	21132
Weight of dried material from an acre	8240	7495	5953
Weight of dried roots from an acre	1258	191	690
Weight of nitrogen in roots from an acre	12.6	2.9	9.7
Weighat of nitrogen in roots from an acre	12.3	2.9	9.7
Total nitrogen in crop from one acre	213.9	172.9	141.2

A most striking example of how the soil may be renovated through the use of the velvet bean is seen from results of a field experiment made by J. F. Duggar at the Alabama Station. Oats were planted on a plot following velvet bean stubble, on a plot following velvet bean turned under, and on a plot following crab grass hay. Only potash and phosphoric acid were used as fertilizer. The cultivation and fertilizing of a plot, being alike in each case. As a result the plot on which the vines were turned under yielded oats at the rate of twenty-eight bushels an acre, that on which the oats followed the velvet bean stubble yielded at the rate of thirty-eight bushels an acre, while the plot on which the oats followed the crab grass yielded only seven bushels per acre. (See Bulletin No. 95 Alabama Experiment Station.)

Two facts are brought out by this experiment; first, it is better to utilize the velvet bean as hay than to turn it under for fertilizer; second, by following velvet bean with oats more than five times as much grain was produced with the same outlay of labor and fertilizer. One objection to this method of soil improvement is that it requires two years to produce the desired crop, yet it will prove much more profitable to raise a crop of hay one year, which is worth far more than the cost of making it, and then obtain a heavy yield of grain one season than get small returns two years or else resort to purchasing nitrogen. It will pay to give a part of the farm to velvet bean each year and by proper rotations build up the soil to a high state of productiveness. It must be remembered that the velvet bean supplies nitrogen only, and if the land is efficient in the other plant foods these must be supplied from artificial sources.

VELVET BEAN AS FORAGE.

Attention has been called to the fact that velvet bean hay contains a large quantity of nitrogen for which it is valuable for restoring this element to the soil, though, as before stated, it is not economical to turn the crop under for this purpose. The percentage of nitrogen multiplied by 6.25 gives the percentage of crude protein in the hay. The feeding value of the hay then is much greater than its fertilizing value, besides a very large portion of the fertilizing elements may be saved as manure, while the hay at the same time may be converted into meat, milk, and butter. In this way two values are utilized, while if the hay is turned under only the lesser value is turned to profitable account.

In making use of the velvet bean as a food for animals three methods may be followed: the vine may be fed green or the field converted into a pasture; the vine may be converted into hay and saved for winter feeding; beans may be gathered and prepared for use as a concentrated food. In making use of velvet beans as food care should be exercised not to start an animal on a full feed either of the green vine or the bean meal, as the result may prove injurious and possibly fatal. The value of a food depends to a great extent on its composition though it is not possible to arrive at this value by an analysis alone. We must know not only the constituents in the food but must also know the digestive coefficients of these constituents. Food is for the purpose of building up waste tissues, that is, for the production of flesh, muscle, blood, nerves, etc., and for supplying energy and heat.

In a food there are two classes of compounds which are important, the proteids, or albuminoids, which tend to produce flesh, muscle, blood, nerves, etc., and the carbohydrates, which produce heat, fat and energy. Most foods also contains fats which like the carbohydrates are heat producing substances though one pound of fat is equivalent to about two and one-fourth pounds of carbohydrates. The cahbohydrates consist of the sugars, starch, fiber, etc., while the proteids are nitrogenous compounds, the most expensive constituents of a food. While it is possible for the carbohydrates to supply only fat, energy, and heat, portein will supply both flesh and energy, yet to convert protein into energy or fat is not economical as these may beo btained at much lower cost from the much less costly carbohydrates. For the best and most economical results the quantity of digestible protein should bear a certain ratio to the digestible fat or heat forming constituetns in a ration. This ratio varies within certain limits, depending upon the kind of animal and the character of work the animal is engaged in, though in general the ratio should be about one of protein to six of heat or fat producing constituents. In order to find the digestive coefficients of the different constituents of a food it is necessary to feed an animal a weighed amount of the food in question (the composition of which has been determined by analysis), to collect all the excrement from this, weigh it and determine its composition. The difference between the amount of any constituent fed and the amount exercised represents the amount digested by the animal. The amount fed gives the digestible coefficient in the food under consideration.

An experiment of this nature was conducted by the

Chemical Department of the Station to ascertain the nutritive ratio of green velvet bean vines. By nutritive ratio we mean the ratio of digestible flesh forming constituents to the digestible fat forming substances.

Two healthy young steers were selected for the experiment. They were confined in stalls and were fed on the green vine seven days before the collections were begun, in order to allow the excrement from other food to pass out of the animals. The experiment was started October 29, 1900 and continued six days. The animals were fed three times daily, the vines being weighed for each animal. A small sample of the vine was selected each day, these were afterwards mixed and analyzed. All the waste vine was collected after each feeding, weighed and analyzed. In addition to this oil-cloth bags were secured to the animals in such a manner as to collect all the excrement, which was removed twice daily and weighed. All the material thus obtained was kept separate for each animal and prepared for analysis.

In the table below the results obtained from this experiment are given in condensed form:

Table No. 1. Digestion of green velvet bean vines; showing the weight in ounces of the material and constituents fed, wasted and excreted, together with the percentage of each digested, and the nutritive ratio.

STEER NO. 1.

	Total.	Dry matter.	Protein.	Fats.	Fiber.	Ash.	Nitrogen free extract.
Ounces fed	3568	935.5	138.8	22.1	302.2	58.5	413.9
Ounces wasted	548	177.4	18.0	3.4	71.9	9.6	74.5
Ounces consumed ...	3020	758.1	120.8	18.7	230.3	48.9	339.4
Ounces excreted	1152	250.9	31.6	4.2	96.1	52.5	66.5
Ounces digested		507.2	89.2	14.5	134.2	3.6	272.9
Percentage digested..		66.9	73.8	77.5	58.2		80.4
Nutritive ratio		1:5.3					

STEER NO. 2.

Ounces fed	3232	847.4	125.7	20.0	273.7	53.0	375.0
Ounces wasted	416	134.0	13.7	2.5	54.3	7.3	56.2
Ounces consumed	2716	713.4	112.0	17.5	219.4	45.7	318.8
Ounces excreted	1208	201.6	30.5	2.6	85.7	32.8	50.0
Ounces digested		511.8	81.5	14.9	133.7	12.9	268.8
Percentage digested		71.6	72.8	85.1	60.9	28.2	84.3

Nutritive ratio 1:5.7

The results obtained with the two animals are fairly concordant, the nutritive ratio in one case being 1:5.3, while in the other case 1:5.7. If we accept the average of these results for the nutritive ratio of green velvet bean, the ratio will be that which is considered best for a horse at hard work or for fattening a steer during the middle period.

The ash constituents which are digested form the bone and mineral matter of the animal body, but this is not included in the calculations when finding the nutritive ratio. It will be noticed that with steer No. 1 more ash seems to have been excreted than consumed, this, however, is the result of being unable to get the sand, which was in the sample, uniformly distributed, so the ash content is too low as represented in the analysis of the food. For the sake of comparison it may be stated that the nutritive ratio of green cowpea vine is 1:5.1.

Another experiment similar to the one just described was begun January 7, 1901,, in which velvet bean hay was used. The hay was gathered in October and was of inferior quality as it was collected too late in the season. This was the only material available at the time of starting the experiment though it was not known until after the experiment was completed that the hay was so inferior as the analysis showed it to be. In this experiment the period continued only five days as one of the animals began to develop abnormal symptoms on the fifth day. Below are given the results:

Table No. 2. Digestion of velvet bean hay; showing the weightin ounces of the material and constituents fed, wasted consumed and excreted, together with the percentage of each digested, and the nutritive ratio.

STEER NO. 1.

	Total.	Dry matter.	Protein.	Fats.	Fiber.	Ash.	Nitrogen free extract.
Ounces fed	1128	104.6	89.9	17.5	452.8	36.9	448.9
Ounces wasted	280	251.2	14.3	3.0	120.4	8.0	105.5
Ounces consumed ...	848	794.8	75.6	14.5	332.4	28.9	343.4
Ounces excreted	840	246.2	28.0	3.6	86.3	25.9	102.4
Ounces digested		548.6	47.6	10.9	246.1	3.0	241.0
Percentage digested ..		69.0	63.0	75.1	74.0	10.4	70.2
Nutritive ratio		1:12					

STEER NO. 2.

	Total.	Dry matter.	Protein.	Fats.	Fiber.	Ash.	Nitrogen free extract.
Ounces fed	1148	1064.5	91.5	17.8	460.8	37.7	456.7
Ounces wasted	340	309.9	18.9	4.3	149.1	12.7	124.9
Ounces consumed ...	808	754.6	72.6	13.5	311.7	25.0	331.8
Ounces excreted	668	155.1	18.4	2.4	56.2	16.5	61.6
Ounces digested		559.5	54.2	11.1	255.5	8.5	270.2
Percentage digested..		79.4	74.6	82.2	81.9	30.4	81.2
Nutritive ratio		1:11.4					

The hay used in the above experiment had the following composition:

Water ....7.27 per cent.
Protein ....7.97 per cent.
Fats ....1.55 per cent.
Fiber ....40.14 per cent.
Ash ....3.28 per cent.
Nitrogen free extract 39.79 per cent.

It will at once be seen that this hay much inferior in composition to hay cut at the proper season by comparing the above figures with those given later under laboratory number 1113. It will be observed that the digestive, coefficient obtained with the two animals differ considerably, which is not entirely unexpected since the condition of an animal has much influence on its digestion

The experiment was closed one day earlier than intended on account of Steer No. 1 developing abnormal symptoms. The results obtained with Steer No. 2 perhaps more nearly represent the digestive coefficients of the hay. The nutritive ratio as found with Steer No. 1 of the hay used is 1:12 while with Steer No. 2 it is 1:11.4. By using the digestive coefficients obtained in the above experiment and applying them to a better hay such as No. 1113 the analysis of which follows, the nutritive ratio becomes 1:6.2 according to figures from Steer No. 1, and 1:5.9 according to figures from Steer No. 2. We may safely act on the assumption that the nutritive ratio of good velvet bean hay is 1:6. We hope to repeat this experiment with a good grade of hay some time in the near future. The nutritive ratio of good cowpea hay is 1:4.7.

TIME FOR CUTTING VELVET BEAN HAY.

In order to form some idea as to the best time to harvest velvet bean vines for hay eight samples were collected at different stages of growth, dried and analyzed.

Laboratory No. 1111, cut September 22, 1899, in bloom.

Laboratory No. 1112, cut September 29, 1899, pods forming.

Laboratory No. 1113, cut October 9, 1899, pods well formed.

Laboratory No. 1114, cut October 13, 1899, pods swelling.

Laboratory No. 1115, cut October 20, pods half matured.

Laboratory No. 1116, cut October 27, 1899, pods nearly matured.

Laboratory 1117, cut November 3, 1899, pods matured.

Laboratory No. 1118, cut November 10, 1899, vine and pods very tough.

The analyses of these samples are here given and for the sake of comparison the results are calculated to the water free basis.

Table No. 3 showing the percentage composition of velvet bean hay cut at different stages of growth.

Laboratory No.	Protein.	Fats.	Crude fiber.	Ash.	Nitrogen free extract.	Dry matter in original material
1111	15.20	1.33	40.17	6.63	36.67	27.1
1112	14.34	2.12	36.26	5.90	41.38	30.6
1113	14.79	1.25	40.32	7.21	36.43	25.2
1114	15.62	1.82	32.21	6.16	44.19	29.9
1115	15,51	2.11	31.23	6.55	44.60	27.8
1116	13.24	2.31	31.72	6.38	46.35	30.2
1117	13.65	3.07	31.17	6.18	45.93	28.0
1118	14.22	3.42	28.41	6.89	47.06	31.6

It would be manifestly unwise to attempt to draw definite conclusions from one set of analyses of this character, as inferences to be of value must be drawn from a large number of results. The results given seem to bear out the idea that during the last month of the plant's life no great amount of additional material is produced but that the material in the vine undergoes considerable change. Certain elements in the vine are drawn upon and stored up in the seeds where it becomes available to the young

PLANTS WHEN THE SEEDS GERMINATE.

These analyses show the progress of such a change to a certain extent. It will be seen that the protein content remains very nearly constant though it is well known that it is largely transferred to the seeds. There is a gradual increase in the fat content so that the quantity is about doubled during the period. On the other hand there is a gradual decrease of the fiber as the plant approaches maturity and a constant increase of the nitrogen free extract. The mineral matter or ash suffers little change. It appears in this case that the fiber is converted into what is termed nitrogen free extract which is a term applied to a number of substances as starch, sugars, gums, etc.

Upon taking the physical condition of the hay produced into consideration with the above results the vine should not be cut later than at the condition represented by No. 1113. In other words, the proper time for harvesting is from the time the bloom appears united before the pod begins to show the formation of the seeds within.

VELVET BEAN AS A FERTILIZER.

We are constantly receiving inquiries as to whether ground velvet bean is good for use as a fertilizer. The reply is that the food value of the ground bean is too great for one to profitably use it for such a purpose. If one can make no use of it as a food, it would be more economical to sell the material as such and purchase fertilizer with the proceeds of the sale. The following analyses wre made which give a fair idea of the fertilizing value of the ground bean and pod, and also of the hulls alone.

Laboratory No. 1081, analysis of ground velvet bean and pod.

Moisture	12.28 per cent.
Nitrogen	2.74 per cent.
Potash, K_2O	1.59 per cent.
Phos. acid, P_2O_5	0.69 per cent.

Laboratory No. 1082. Analysis of velvet bean hulls.

Moisture	11.62 per cent.
Nitrogen	1.08 per cent.
Potash, K_2O	2.16 per cent.
Phos. acid P_2O_5	1.87 per cent.

From the above analysis we find that one ton of beans in the pod contains 54.8 pounds of nitrogen, 31.8 pounds of potash, and 13.8 pounds of phosphoric acid, which gives it a fertilizing value of from ten to eleven dollars.

Instead of grinding the material it may be worked up into a compost.

THE BEAN AS FOOD.

I have little personal knowledge as to how stock relish the ground beans but have been informed by several parties that in many cases stock seem reluctant to eat the material at first, but upon becoming accustomed to it, eat it greedily. On account of the toughness of the bean it should be ground before feeding. Some even cook the material previous to feeding and claim that cattle prefer it thus prepared. In order to reduce the cost of handling, some turn their stock and swine into the field to feed upon the bean. Unfortunately the only digestion experiment we have undertaken with the ground bean proved a failure and was not completed, so it is not possible to say what percentage of the different constituents in it is digestible. We hope later to determine its nutritive ratio so that its exact feeding value may be known. The following analyses are given which may prove of some service and for the present the digestive coefficients may be regarded about the same as those of the cowpea.

Laboratory No. 1081. Proximate analysis of ground velvet bean and pod.

Water	12.28 per cent.
Protein	17.13 per cent
Fats	4.61 per cent.
Fiber	14.25 per cent.
Ash	4.01 per cent
Nitrogen free extract	47.72 per cent.

Laboratory No. 1083. Proximate analysis of shelled velvet bean.

Water	11.46 per cent.
Protein	22.69 per cent.
Fats	6.60 per cent.
Fiber	7.56 per cent.
Ash	3.16 per cent.
Nitrogen free extract	48.53 per cent.

VELVET BEAN AS A COVER CROP.

The plant in some respects make an excellent cover crop. The dense growth protects the ground from the sun and crowds out objectionable grasses and weeds. It has proved a source of annoyance to some in their orchards on account of the tendency it has to climb and take possession of the trees. However, this may be avoided by proper planting and attention so as to prevent the vines reaching the trees. An objection advanced by Prof. Hume to using this plant in orange orchards is that it acts as a harbor for one of the Soldier Bug family which turns his attention to the trees after the vine is dead.

VELVET BEAN AS AN ORNAMENTAL.

In this climate where it is essential to have our porches protected from the sun the velvet bean, on account of its great growth is very much in favor. This was its only use in the state for nearly twenty years. Not only does it make a dense shade but it is quite an attractive vine, the blossom is very pleasing and the pods too are attractive, the common name of the plant being derived from the appearance of the pod.

AS MIXED FOOD.

FEEDING EXPERIMENTS WITH VELVET BEANS AND CASSAVA IN COMBINATION.

Thousands of acres of these two crops have been produced during the past season and are now covered with the product in sufficient quantity to fatten thousands of cattle. The question now troubling the owner is, how can the fattening constituents of the cassava be best combined with the muscle-making constituents of the velvet beans so as to form the most effective and economical ration? That such a combination is desirable is not doubted. The proportion and form in which the carbohydrate food should be combined with the protein ration is still the subject of inquiry.

At the recent State Fair, the Experiment Station had on exhibition two steers which had been fed for 60 days exclusively in rations containing these two crops for the sole purpose of answering by actual trial these queries. Incidentally the feeding of these steers was a practical demonstration of the possibility of these typical Florida feed-stuffs.

The results of this experiment are here presented as a guide to farmers with these two crops which they wish to utilize to greatest advantage. They at the same time serve as a further illustration of the possibilities of

Florida for the development of a great beef-making industry. The animals fed consisted of one typical native Florida steer and one grade shorthorn steer. The two therefore funished a comparison between the native and a cross of the same with recognized beef blood.

Feed Used.—The feeding began on September 11. The beans were therefore used as green feed, the beans being just formed at the beginning of the period and mature at the end. Pasturing would probably have been the cheapest way to feed a large herd, but for our small number, and that the material might be weighed and an accurate account kept, soiling was practiced, the material being cut morning and evening. Cassava and cottonseed meal were used with the green feed, the meal being needed as a concentrate to balance the ration. Later in the season the use of ground velvet beans would have obviated this necessity and cheapened the ration.

QUALITY AND COST OF RATION PER DAY.

	V. B. Forage.	Cassava.	C. S. Meal.	Cost.
Native	38lbs.	16lbs.	4lbs.	7.6c
Grade	61lbs.	24lbs.	6lbs.	11.5c

The cost of ration is based on the following value per ton: Forage 30c, cassava $3, cotton seed meal $23.50.

The cassava was run through a root-cutter and then mixed with the meal. The forage was fed fresh and was intended to be before the steers all the time, they receiving all they would eat up clean.

COST OF GAINS MADE.

	Original Weight.	Final Weight.	Gain in Pounds.	Cost of Steer.	Cost of Food.	Total Cost..	Profit.	Per Cent Profit.
Native	732	862	130	$18.30	$4.56	$22 86	$7.31	32.0
Grade	1190	1404	214	41.65	6.90	48.55	7.61	15.6

The purchase price of the native steer was 2½ cents per pound; the selling price was 3½ cents. The purchase price of the grade steer was 3½ cents and the selling price was 4 cents. The percentage gain of the two animals during the 60 day period was: Native 17.6 per cent., grade 18 per cent.

The smaller comparative profit from the grade steer was due to the fact that he was in relatively better condition when purchased and cost more per pound, while the average local market of Florida is at present not educated to a full appreciation of the difference in quality of beef so that the selling price was lower than the superior quality would have secured in larger markets. In both cases,however; the increased value of fattened beef over the range animal was demonstrated. The native steer sold for one cent and the grade for one-half cent per pound above original purchase price.

The increased value of the entire carcass as a result of feeding is the chief source of the profit since the feeder not only secures the increased weight resulting from the feeding, but also the increased value of the original weight as a result of improvement through the fattening process.

AREA AND FEEDING CAPACITY.

The amount of land required for fattening steers by the use of cassava and velvet beans is a most important consideration. The native steer used in this test was one of a pair running above the average size for range animals. Adopting 500 pounds as the average live weight of the Florida steer and feeding him at the same rate in proportion to his weight the quantity of velvet bean forage consumed per day would be about 26 pounds and of cassava 11 pounds.

The yield of forage with the crop fed was over 12 tons per acre and the cassava yield about 7 tons. At the rate of feeding mentioned the quantity required for a 60 day period would be velvet bean forage 1560 pounds and of cassava 660 pounds. Feeding velvet beans and cassava in the form used with the native steer, one acre of velvet beans approximately balances two-thirds of an acre of cassava. Fed this way this area will feed fifteen average Florida steers for market as fat beef if no time is wasted in teaching the range animal to consume fed rations.

MORE EXPERIENCE.

Mr. G. A. Danly, of West Florida also says, we have a vine, the velvet bean, that while comparatively a new discovery as a forage crop is rapidly coming into general use throughout this territory. The velvet bean is a legume and is the greatest soil renovator of any known plant. It is a rank grower and does well on poor soil where the cowpea would fail to grow. For that reason it has sometimes been called "the poor man's fertilizer." It will grow from spring till frost and will cover the ground from three to four feet deep, with a solid mass of vines forty to fifty feet in length. One point of excellence is that cattle, hogs and horses will eat the vines and beans in the field. They will do the harvesting, thereby saving labor and expense. It is conceded that one acre of beans will fatten four head of steers. It makes good beef and at little expense, but it is economy to feed cassava with it, which makes a better balanced ration. There is nothing equal to the velvet bean for building up old worn-out land and it will increase the crop 50 per cent. the first year. The hay is nutritious and can be cut any time during the summer season. It withstands the severest drought or wettest weather. There is no crop that can be grown with less expense, and it supplies a forage crop in winter when it is needed for all kinds of stock. The Louisiana Experiment Station found that the crop of beans from an acre of ordinary old land contained 191 pounds nitrogen, 243 pounds of potash and 41 pounds phosphoric acid which, when turned under, had a fertilizing value of $40 per acre. The Alabama Station took a worn out hillside that had been planted in velvet beans and plowed under, and got over four times as much oats as where crab-grass had been turned under. Mr. Kilne O. Varn of Fairview Farm who planted 400 acres of beans last year says: "The bean is rich in protein and of the same feeding value as cotton seed meal. The vines are rich in carbohydrates and supply the roughage, making a complete feed that cannot be excelled in cheapness. The vines make the finest feed for milch cows and thy are equally good for hogs and horses." In making the crop, prepare the land in the same manner as for corn. Plant when danger of frost is over, in rows four feet apart, twenty inches in drill, with two or three beans in a hill. Cultivate once or twice or until the vines begin to run. The vines grow at a prodigious rate and cover the ground waist deep. The old leaves drop off and the new ones keep coming on, and I have seen the ground covered six inches deep with fallen leaves and not one could be missed on the vines. The vines keep green until frost and the cattle will eat the beans and dry vines until March, seemingly with great relish. To illustrate the value of velvet beans to pulverize hard soil, I will say that I know of a field planted in velvet beans that had an old road running through it. That road broke up in chunks and many of them were as large as a bushel basket. The vines have laid there all winter, and this spring that old road is like an ash heap. There is one spot, however, in the old road that the bean did not cover and the clods are yet there as hard apparently as bricks.

PASTURING.

The following experiment in fattening cattle, by pasturing on the green vine, shows their value in still another form:

Mr. C. L. Knight of Tampa, at the end of the cropping season of last year found himself with a field of 140 acres of velvet beans, grown upon land which he himself says is as poor as any farm in the country. It lies four or five miles north of town, and is known as the old Watrous place. In November, when the beans were fully ripe, he turned 110 head of all kinds of cattle upon the beans without restriction. He gave them access to an unlimited quantity of water, pumped fresh every day, and was surprised to find that the stock consumed a measured quantity of eight gallons per head. In the meantime they feed greedily upon the beans, which were left on the ground as they grew—thus avoiding all the labor of hauling and spreading the feed.

At the end of forty days Mr. Knight found that with two exceptions every beast in the field was fat enough for market and he sold the fatted steers to Worth and Brandon, who have been butchering them for the market.

The carcasses are of remarkably fine quality and fill the most exacting want of the consuming public. Mr. Knight gets a cent a pound above the usual price, and while he did not employ scales to determine the exact increase or gain of each steer, he is satisfied that it is not less than two hundred pounds, or five pounds per day. This makes a clean gain of ten dollars per head. Had Mr. Knight's cattle all been beeves his increased revenue from this field of beans would have exceeded one thousand dollars, and there is no doubt that the profit now in the cows and calves which shared the pasture will remain in them.

This feeding has not exhausted the field, it has much improved the fertility and condition of the soil, and it is safe to say that this latter item alone offsets all the cost o fthe bean crop. In talking of the matter Mr. Knight lays much stress upon having an abundant supply of pure water where the cattle can get it at all hours. This showing is unquestionable, and it simply adds additional testimony to what the Tribune has frequently printed along the same line. These cattle were the common Florida scrub stock, and the success of this experiment can be duplicated in proportion by every man who has as much as one cow brute and one acre of land. There is no reason why Hillsborough county farmers may not in five years be disposing of fifty thousand head of fattened beeves every winter at prices which will bring a million and a half of dollars in cash into the county—perhaps double as much as every combined fruit and farm produce now brings.

The foregoing experiments demonstrate beyond question that beef can be produced in Florida, of as fine quality and as cheaply as anywhere else in this country.' The velvet bean will grow to perfect maturity in every section of Florida, and as before stated, in addition to the feeding qualities, its vigorous growth enables it to quickly and completely cover the ground, making cultivation unnecessary, while it fertilizes the soil, leaving it loose and friable, and in the best condition for future crops; it is a great source of wealth that the people of our state cannot fail to take advantage of.

As a food crop, and as a soiler of permanent merit, the velvet bean has come to stay; it remains with the people to make of it an inestimable blessing.

BULLETIN
FLORIDA AGRICULTURAL DEPARTMENT.

VOL. 13, FEBRUARY, 1904. NO. 89.

REPORT

OF THE

State Chemist

OF

Florida, 1903.

AGRICULTURAL DEPARTMENT
DIVISION OF CHEMISTRY,
R. E. ROSE, State Chemist.

Entered January 31, 1903, at Tallahassee, Florida, as second-class matter, under act of Congress, of June, 1900.

I. B. Hilson, State Printer,
Tallahassee, Florida,
1904.

FINANCIAL REPORT OF STATE CHEMIST FOR 1903.

Agricultural Department, State of Florida,
Division of Chemistry,
Tallahassee, Jan. 1, 1904.

To His Excellency, W. S. Jennings, Governor of Florida,
Tallahassee, Fla.:

SIR:—I have the honor to submit the following report o fthe receipts and expenditures of this Division of the State Agricultural Department for the year ending, December 31, 1903:

Total amount received for inspection fees, fertilizer stamps on cotton seed meal, commercial fertilizers, and manurial chemicals.	$ 22,761 58
Paid salary State Chemist	2,000 00
Paid salary Assistant State Chemist	1,591 65
Paid traveling expenses State Chemist	808 05
Paid Laboratory supplies and Chemicals	336 24
Paid improvements and additions to State Laboratory	1,409 22
Total expenses	$ 6,145 16
Balance to credit of General Revenue	16,616 42
	$ 22,761 58

Respectfully submitted,
T. E. ROSE,
State Chemist.

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State Chemist's Report. 1903.

To His Excellency,
W. S. Jennings,
Governor of Florida:

Sir:—

I have the honor to submit the following report of the Division of Chemistry, Department of Agriculture of the State of Florida, for the year ending Dec. 31, 1903:

Respectfully,
R. E. ROSE,
State Chemist.

INSPECTION OF FERTILIZERS.

In compliance with an act of the Legislature, to provide for the "Inspection and analysis of, and to regulate the sale of commercial fertilizers, etc," approved May 22, 1901. The State Chemist or his assistant have visited all parts of the State during the year from Pensacola to Key West, makinng four general inspections of each portion of the State, and numerous visits to the larger sea coast cities, where fertilizerrs are manufacttured, or distributed. Also to the centers of manufacture and distribution in the interior of the State. Samples have been taken from factories, warehouses, and in the field where used in all parts of the State.

The cotton, tobacco, and cane plantations of the State, the vegetable and pineapple fields of the East and West coasts; the orange, strawberry, potato, celery, and other fields of the interior, have been generally inspected, and samples of the fertilizers used taken from the consumers direct.

During the year more than twelve thousand miles have been traveled by the State Chemist by rail, steamer and other conveyance, inspecting fertilizers and drawing samples.

Coming closely in touch with the manufacturer, dealer and consumer, of commercial fertilizers.

The provisions of the law have been discussed and explained to the manufacturer, dealer and consumer; the sheriffs, and others charged with its enforcement. The active co-operatioon of all citizens in enforcing a compliance with the law to protect the legitimate manufacturer, dealer and the consumer from adulteration, or inferior goods has been practically demonstrated.

I am pleased to say, that a general interest has been manifested, that the citizens of the State, the sheriffs, and their deputies, are taking an active interest in assisting the department in preventing the imposition of worthless or deficient commercial fertilizers, upon the consumer. I am also glad to say, that with no exception the Florida manufacturers, dealers, importers, and distributors, of legitimate goods, are heartily in accord with the department; and assist in the enforcement of the law, recognizing the protection it gives them from the irresponsible dealer in fraudulent and deficient goods.

There has evidently been a very considerable increase in the use of commercial fertilizers, as evidenced by the increased revenue from the sale of fertilizer inspection stamps. This increase is attributed to the closer inspection of fertilizers. Cotton seed meal are other fertilizing material, and to the fact that the consumer is becoming educated, to the point that he demands the presence of the "State stamp" and the "Guaranteed analysis" on each package, as provided by law for his protection.

During the year but few seizures of fraudulent goods have been made by the department, or the sheriffs, throughout the State. This is not attributed to any laxity in the enforcement of the law, but to an avoidance of its penalties by those who formerly attempted to evade its provisions.

The tables of analysis of commercial fertilizers submitted herewith show an increase in the grade, or class of goods sold in the State. The natural result of a better understanding of the law, and an increased knowledge of its requirements.

It will be noticed that the number of "Special samples" (those sent in direct by the purchaser of fertilizers) has very materially increased, showing that the law is becoming more generally understood, and its privileges more appreciated by the farmer, fruit and vegetable grower. Purchasers who have any reason to doubt the correctness of the guarantee on the goods furnished them, do not hesitate to send in samples for analysis.

The average of all the mixed fertilizers, officially sampled and analyzed during the year shows, 3.42 per cent. ammonia; 6.22 per cent. available phosphoric acid, and 7.23 per cent. potash; or 338 pounds of actual "plantfood" per ton of material. This is above the average of similar goods sold throughout the United States, which is about 300 pounds of "plant food" per ton.

The average price, from the price lists of a number of dealers and manufacturers, selling the bulk of the goods used in the State during the year was $33.00 per ton. The average commercial or "state value" of these goods was 27.00 per ton an excess of $6.00 per ton over "state values."

This profit, or excess, of $6.00, is less than the general profit on similar goods sold throughout the country, as shown by reports of other States, the general average of profit or excess per ton on commercial fertilizers sold throughout the United States being $8.00 per ton for goods furnishing 300 pounds of actual "plant food" per ton, showing that Florida manufacturers and dealers. furnish a better class of goods—averaging 338 pounds of plant food—for less money.

By far the largest amount of commercial fertilizers used in Florida, are manufactured or mixed by factories in the State. Large amounts of fertilizing materials are imported direct by factories, and dealers located at our sea port cities; cargoes of potash salts direct from Germany are now frequently received by Florida importers, while large amounts of acid phosphate are manufactured at, and exported from the various Gulf and Atlantic port.

Florida consumers may now purchase their fertilizers and chemicals at Florida sea ports, as cheaply as at any of the sea ports of the country.

No consumer demands a higher lcass of fertilizers than do the vegetable and fruit growers of Florida. No class of producers are better qualified to judge the value of goods furnished; that the Florida dealer, and manufacturer recognize the fact that they have to meet the critical demands, of unusually intelligent and capable consumers, is evidenced by the high average of the goods furnished, and the comparatively reasonable prices demanded therefor.

In those parts of the State largely devoted to cotton growing, there are still used very considerable quantities of "low grade," goods, having not to exceed 240 pounds of "plant food," generally known as "8—2—2 grades" or "10—1—1" goods, their relative values is much less than the higher grade goods demanded by the fruit and vegetable growers of the State, with their smaller arears of intensely cultivated fields.

The same quality of plont food (240 pounds) contained in a ton of "8—2—2 goods" may be had in 1280 pounds (or less) of higher grade goods, or less than two thirds of the bulk or weight. In other words two tons of the higher grade goods, have more actual value, than three tons of the lower grade, and will actually cost less at the factory, saving the profit ($6.00) on one ton, alo the freight, hauling, and handling of a ton of useless matter.

Three tons of "8—2—2 goods" contain 720 pounds of plant food.

Two tons of high grade goods contains 841 pounds. On this subject, I quote from the "Vermont Experimental Station, Bulletin No. 99—May 1903.

"The high grade fertilizers for a third advance in price over the low grade goods, furnish two thirds more plant food, and five-sixths more commercial value."

With the hearty support of the manufacturer of legitimate goods, the dealer, and consumer, there is no reason why the present law should not amply protect our growers in this most important, and essential part of their business, the foundation on which their success or failure depends. The wisdom of the State Legislature in providing a fund for inspection has been demonstrated by the increased revenue of the division, many times exceeding the expenditure. While the financial benefits to the State, from a closer and more systmatic inspection have been great, much the greatest benefit has been derived by the consumer of fertilizrs, and cotton seed meal; large quantities of goods have been—previous to the passage of the present law—sold in the State for more than double their actual value; in some cases for many times their actual market value, resulting not only in a direct loss, but in the entire loss of the seasons crop, the time, and labor expended.

ANALYTICAL WORK.

During the year, there have been, one hundred and one, "official samples" drawn by the State Chemist. Two hundred and twenty-nine, "Special samples," sent in by purchasers, and one hundred and twenty-seven, "miscellaneous samples" of clays, rocks, ores, oils, etc., sent in by various citizens o fthe State; a total of four hundred and fifty-seven complete analysis, involving from six to eight determinations each.

I find but one instance in which a deficiency greater than of one-fifth per cent. or "twenty points (.20)" occurs in the three escential elements, guaranteed.

That four are deficient in two elements; that, forty-one are deficient in one element; to an extent greater than one-fifth per cent. or four pounds per ton.

Any excess, or deficiency less than one-fifth per cent. or "twenty points" (.20) as commonly stated, is not noted, as it may be accounted for in the sampling.

I find that eight samples had an excess above one-fifth per cent. in all three elements.

That twenty-seven had an excess in two elements.

That thirty-four had an excess in one element.

There were fourteen samples deficient in available phosphoric acid.

There were thirteen samples dificient in ammonia.

There were twenty samples deficient in potash.

Forty-four samples had on excess (greater than one-fifth per cent.) of phosphoric acid.

Thirty-four had an excess of ammonia.

Forty six had an excess of potash.

Under the present law, and regulations, the manufacturer is required to state, in the guarantee, only the minimum percentage guaranteed, and is not allowed to state a variable percentage; as "from 3 per cent to 5 per cent." or "2½ per cent. to 3½ per cent."; hence the customer knows what he may expect to receive in purchasing his goods; under former rules it was not unusual to have a guarantee with two per cent lattitude between the maximum and minimum guarantee, or "5 per cent to 7 per cent. ammonia "8 per cent to 10 per cent. potash," etc.—obviously the smaller amount is the actual guarantee, though the buyer may expect, (and hope), to get the maximum, he can demand no more than the minimum. I note in some of the price lists and catalogues this practice is continued; though the "tags" and "guaranteed analysis" on the packages, state only the minimum amounts guaranteed.

An examination of the following tables of "official samples analized" will show that by far the greatest number have an excess of more than one-fifth per cent. in one or more ingredients.

There being forty-six deficiencies in 303 determinations less than 12 per cent of the whole.

There were 125 excesses of the guarantee, in the 303, determinations, or more than 41 per cent. of the whole number of determinations, showed an excess of material above the amount guaranteed.

COMMERCIAL VALUES OR "STATE VALUATIONS."

While these values are not absolute, and are only made for comparison, and may vary rfom market values at times, they are the average of the values at our sea ports, for the various ammoniates, potashes and phosphates, at the time of the issue of the bulletins.

They have never, during the past three years, been less than the market prices of the necessary chemicals or other materials required in the manufacture of complete fertilizers. At all times the consumer could, if he desired, purchase the necessary materials and have them mixed and sacked at the State values.

For this year 1904, the following State values have been adopted by the Department of Agriclulture.

STATTE VALUATIONS.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1904.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen)	15 cents a pound
Potash (as actual potash, K2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $1.25 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent. in a ton. We find this to be easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid	6.22 per cent.	x$1.00—	6.22
Insoluble Phosphoric Acid	1.50 per cent.	x .20—	.30
Ammonia	3.42 per cent.	x 3.00—	10.26
Potash	7.23 per cent.	x 1.10—	7.95
Mixing and bagging			1.25
Commercial value at sea ports			25.98

Or a fertilizer analyzing as follows:

Available phosphoric acid	8 per cent.	x$1.00—	$ 8.00
Ammonia	2 per cent.	x 3.00—	6.00
Potash	2 per cent.	x 1.10—	2.20
Mixing and bagging			1.25
Commercial value, at sea ports			$17.45

The above valuations are for cash for materials delivered at Florida sea ports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of ten per cent. can be made in above valuations, *i. e.*:

Available Phosphoric Acid	90 cents per unit
Potash (K2O	99 cents per unit
Ammonia (or equivalent in nitrogen)	$2.70 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

MARKET PRICES OF CHEMICALS AND FERTILIZING MATERIALS AT SEA PORTS, JAN. 4, 1904.

AMMONIATES.	Less than 5 tons	5 to 10 tons.	10 tons & over.
Nitrate of Soda 17 per cent. Ammonia	$50.00	$49.50	$49.00
Sulphate of Ammonia 25 per cent. Ammonia	71.00	70.50	70.00
Dried Blood 16 per cent. Ammonia	54.00	53.50	53 00
POTASH.			
High Grade Sulphate Potash 48 per cent. Potash (K2O)	52.00	51.00	50.00
Low Grade Sulphate Potash 26 per cent. Potash (K2O)	32.00	31.00	30.00
Muriate of Potash 50 per cent. Potash (K2O)	46.00	45.00	44.00
Nitrate Potash, 13 Am., 42 Potash (K2O)	82.00	81.00	80 00
Kainit 12 per cent. Potash	14.00	13.50	13.00
Canada Hardwood Ashes 4 per cent. (K2O) Potash	17.00	16.50	16.00
AMMONIA AND PHOSPHORIC ACID.			
High Grade Blood and Bone, 10 10 per cent. Ammonia 7 per cent. Phosphoric Acid	35.00	34.50	34.00
Low Grade Blood and Bone, 6½ per cent. Ammonia, 8 per cent. Phosphoric Acid	27.00	26.50	26.00
Owl Brand Tankage, 5½ per cent. Ammonia	20.00	19.50	19.00
Raw Bone 4 per cent. Ammonia, 22 per cent. Phosphoric Acid	29.00	28.50	28.00
Ground Castor Pomace 6 per cent. Ammonia, 2 per cent. Phosphoric Acid	22.00	21.50	21.00
Bright Cotton Seed Meal 8 per cent. Ammonia market quotations	26.00	25.50	25.00
Dark Cotton Seed Meal, 5 per cent. Ammonia, market quotations	18.00	17.50	17.00

PHOSPHORIC ACID.

Double Super Phos., 45 per cent. Available Phosphoric Acid. . .	45.00	44.50	44.00
High Grade Acid Phosphate, 16 per cent. Available Phosphoric Acid	16.00	15.50	15.00
Acid Phosphate 14 per cent. Available Phosphoric Acid. . . .	14.00	15.50	13.00
Boneblack 17 per cent. Available Phosphoric Acid	25.00	24.50	24.00

MISCELLANEOUS.

H. G. Ground Tobacco Stems, 3 per cent. Ammonia, 9 per cent. Potash	25.00	24.50	24.00
Pulverized Ground Tobacco Stems	16.00	15.00	15.00
Tobacco Dust, No. 1, 3 per cent. Ammonia, 2 K2O Potash.	21.00	20.50	20.00
Tobacco Dust, No. 2, 1½ per cent. Ammonia, 1½ per cent Potash.	16.00	15.50	15.00
Dark Tobacco Stems, baled.	16.00	15.50	15.00
Land plaster in sacks	10.50	10.25	10.00

Any formula will be mixed at the price of $1.25 per ton, in addition to the cost of the materials used.

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19	....	....
Sulphate of Ammonia	21 to 24	....	....
Dried Blood	12 to 17	......	....
Concentrated Tankage	12 to 15	1 to 2	....
Bone Tankage	6 to 9	10 to 15	....
Dried Fish Scrap	8 to 11	6 to 8	....
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	13 to 17	1½ to 2	....

PHOSPHATE MATERIALS.

	Pounds per Hundred.		
	Ammonia	Available Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphte	....	....	33 to 35
Florida Rock Phosphate	....	....	26 to 32
Florida Super Phosphate	....	14 to 19	1 to 6
Grounded Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissoved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actual Potash	Am'nia	Phosphoric Acid	Lime
Muriate of Potash	50	....	....	....
Sulphate of Potash	48 to 52	....	....	....
Double Sul. of Pot. & Mag.	26 to 30	......	....	....
Kainit	12 to 12½	......	....	....
Sylvinit	16 to 20	....	......	....
Cotton Seed Hull Ashes	15 to 30	....	7 to 9	10
Wood Ashes, unleached	2 to 8	.....	1 to 2	30 to 25
Wood Ashes leached	1 to 2	......	1 to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4	.....	3½
Cow Manure (fresh)	0.40	0t·41	0.16	0.31
Horse Manure (fresh)	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)	0.67	1.00	0.23	0.33
Hog Manure (fresh)	0.60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.26	0.70

FACTORS FOR CONVERSION.

To convert—
Ammonia into Nitrogen, multiply by..............0.824
Nitrogen into ammonia, multiply by..............1.214
Nitrate of soda into nitrogen, multiply by........16.47
Bone phosphate into phosphate acid, multiply by..0.458
Muriate of Potash into actual potash, multiply by..0.632
Actual potash into muriate of potash, multiply by..1.583
Sulphate of potash into actual potash, multiply by.0.541
Actual potash into sulphate of potash, multiply by.1.583

For instance you buy 95 per cent. of nitrate of soda and want to know how much nitrogent in it, multiply 95 per cent. by 16.47 you will get 15.65 per cent nitrogen; you want to know how much ammonia this Nitrogen is equivalent to, then multiply 15.65 per cent. by 1.214 and you get 18.99 per cent., the equivalent in ammonia.

MECHANICAL CONDITION.

Other things equal, the fertilizer in the best mechanical condition, finely ground, and uniformly mixed, will give the best results. During the year several of our largest and most reliable Florida manufacturers have greatly improved their facilities for the proper grinding and mixing of their goods. Florida has now a number of fertilizer plants with machinery and facilities for the proper preparing and mixing of materials equal to any. There is no reason why improperly ground and mixed goods should be accepted.

The grower should note the mechanical condition and the fertilizer content, as expressed on the guarantee, remembering that he is interested only in the ammonia, available phosphoric acid, and potash, that all other ingredients are simply fillers or make-weights. Let the dealer call it what he pleases, the name has no value, agriculturally or chemically whatever.

MULTIPLICITY OF BRANDS.

There are a large number of brands in the State, manufacturers having frequently from fifteen to twenty or more, names or brands, besides numerous "special crop" formulas. Frequently the same formula is sold under different names, by the same manufacturer. This is explained by the statement that the source of the fertilizing elements are differnt, though the analysis is the same.

CHEMICAL COMBINATION; WET AND DRY MIXING.

The question is frequently asked, if an intimate mechanical mixture, is equal to a perfect chemical combination of fertilizing elements in field results. Much depends of materials used; pure salts, nitrate o soda, sulphate of potash, acid phosphate and similar soluble materials, finely ground and intimately mixed, doubtless give satisfactory results, if properly applied. Other materials, coarse tankage, blood and bone, garbage, factory waste, hoof meal, dried flesh, horn, hair, fish scraps, coarsely ground, and mixed dry, are certainly not in a quickly available condition, they will, in time, yield up their fertilizing elements, after decay, or chemical decomposition, (or combination.)

On general principles,, such material should be mixed with the necessary solvents and allowed to "ripen" (chemically combined) before being used. There is no doubt that much of the popularity of certain brands of goods and their uniform satisfactory results, is due to the careful mixing of the ingredients, their proper chemical combination by solvents, with ample time allowed for the mass to combine and become thoroughly incorporated, uniform and homogenous.

Such fertilizers though frequently composed of cheap greater chemical value, than others, give better results material. factory waste and bye products, and of no in the field. Our vegetable growers, tomato, celery, lettuce, beans, etc., and our strawberry growers demand a quickly available fertilizer, such as is ready for immediate assimilation by the plant, only a thoroughly prepared, finely ground, or chemically dissolved, material will meet these demands; coarse material of any kind will not meet the immediate demand of these quick growing crops; many first-class frtilizers suitable for fruit trees. and general field crops. occupying the soil for the entire season or for years, are unfit for these quick growing crops.

AVAILABLE PHOSPHATES, SUPER PHOSPHATES, DISSOLVED BONE.

The use of mineral phosphates, as fertilizer is of comparative recent date. The Carolina deposits for years was the only source of supply. Much prejudice had to be overcome to induce farmers to believe that "rocks" wre as good as bones in the manufacture of "guano." The result was that thousands of tons of Carolina rock were sold, and are still sold as "dissolved bone," this prejudice to a certain extent still exists and growers demand that their goods be made from "dissolved bone" or "bone black," (and pay larger prices therefor) and get simply "acid phosphote" or dissolved Carolina, Florida, or Tennessee "rock phosphates", in every way as good, and as valuable as "dissolved bone," so far as the available phosphoric acid is concerned. This prejudice costs our farmers thousands of dollars every year and causes manufacturers and dealers to misrepresent one of the most valuable of our fertilizing materials.

The universal opinion of agricultural chemists, experimental stations, and practical farmers is now, that available phosphoric acid be it derived from "bone," Florida, Carolina or other mineral phosphate, or from "Thomas Slag," is identical, and of the same value chemically or agriculturally. In this connection I am pleased to again quote from the report of the Hon. John M. McCandless, State Chemist of Georgia, as follows:

"It should be borne in mind always that State valuations are relative and approximate only, and are only intended to serve as a guide. It is much to be desired that farmers should study the analysis ginving the actual percentage of plant food more, and pay no attention whatever to names and brands. They should realize, for instance, that in nine cases out of ten, brands known as "Pure Dissolved Bone" contain not a particle of bone, but are made simply out of phosphate rock. They are every "whit and grain" as goods as if they were made from bone, the available phosphoric acid from rock being just as avalable and identically the same as the available phosphoric acid from bone. The proof that such brands are not made from bone is that they contain no ammonia, and if they were made from bone the percentage of ammonia would be stated, and that it would be charged for. This is only one instance of the folly of being influenced by names and brands—many might be given. Remember that a multiplicity of brands is also expensive to the manufacturer, and you have to pay the cost in the long run. Study the markets, select a time for purchasing when general trade in fertilizers in dull, club together with some of your neighobrs whose credit is of the best, or better who have a little spare cash, and then order from a reliable manufacturer, stipulating, if you have a preference, just what materials the goods shall be made from, and especially the guaranteed percentage of ammonia, phosphoric acid and potash. Let the maker call it anything he pleases. In this way you will be sure to have a first-class goods bought at the lowest market price."

The generally accepted opinion of agricultural chemists, experimental stations, agricultural colleges, and practical growers, is that available phosphoric acid, from any source is equally valuable, hence it is folly to demand and pay for dissolved bone or dissolved bone black, higher prices, particularly when acid phosphate as such can be purchased for less money.

FREE ACID IN ACID PHOSPHATE OR SUPER PHOSPHATE.

Some complaint has of late years been had from this source, and much of the prejudice against "mineral phosphate" has doubtless arisen from this cause. In properly prepared acid phosphate, dissolved bone, or super phosphate, there should be no free acid, all acids should be combined with the lime of the "bone" or "rock" to form gypsum or sulphate of lime, a neutral salt, beneficial and not harmful to growing crops, frequently used as a top dressing, particularly on meadows. Unfortunately in the desire to increase the "availability" of the goods, an excess of acid is sometimes used; or goods still "wet" or "green" that have not had time to "ripen" or chemically combine the acid with the lime to form sulphate are sold to the consumer, or mixed with other materials forming "green" fertilizers. In most cases particularly in "mixed goods" time will correct this fault and the goods become "dry" or neutral. In this connection it is well to call attention to the well established to all practical farmers that fresh, undecom-

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Sec. 9. Any person purchasing any fertilizer from any manufacturer or vendor in this State for his own use, such person being a citizen of this State, may submit fair samples of said fertilizer to the Commissioner of

OFFICERS:

R. E. ROSE, President, Tallahassee.
HENRY CURTIS, Vice-Pres., Quincy.
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G. A. DANLEY, Chipley.

Florida State Agricultural Society.

Tallahassee, Fla., February 12, 1904.

Dear Sir:

I am again a candidate for the office of State Chemist before the Democratic primary to be held in May, 1904. I announced my candidacy before the primary of 1900 as follows:

"Knowing the importance of this office to the farmers of the State particularly, and our citizens generally, believing the office can be made of great service in the development of the agricultural interests of the State, I shall, if elected, endeavor to have its present usefulness extended in a practical manner.

While the 'technical' work of the office is most important and for which I am well qualified by long practical experience—this 'technical' work is well known to be of less importance than the practical enforcing of the inspection laws, and prevention of the sale of fraudulent or adulterated goods. I shall, if elected, endeavor to protect the farmer and honest manufacturer from the unscrupulous and unreliable vendor.

I hope and expect to receive the hearty co-operation of the Commissioner of Agriculture, also the hearty assistance of Florida's agriculturists and horticulturists in preventing frauds of this nature, and to make the office a bulwark between the consumer, the honest manufacturers and the dishonest vendor.

The office is not a political one—at least, I am not a politician, though a Democrat—but should be run on business principles for the benefit of all the people of the State, and the protection of all citizens."

I have endeavored to keep the promises made at that time, to make the office a practical means of protection to the farmer, and the legitimate manufacturers of honest goods; to economically perform the duties of the office, to collect the revenue provided by law from all dealers in fertilizers and cotton seed meal; to make the office useful to all citizens of the State.

Your careful attention is drawn to the official reports, to the results obtained financially, and the improvement in the grade, or value, of the fertilizers sold in the State.

Hoping to receive your hearty support, and to deserve the same, I am, very respectfully,

Yours truly,
R. E. ROSE.

fact, known to all practical farmers that fresh, undecomposed stable manure, and particularly fresh hen dung will "burn" or "fire" plants, if used without decomposing or composting.

Peruvian guano, a most valuable natural fertilizer, when applied in quantity or in direct contact with seed or plants, will certainly "burn" and destroy them, commercial fertilizers, are artificial guanos and have exactly the same effect as natural guano or fresh hen dung, they should not be applied direct to growing plants, nor in contact with seed; nor should any crop be planted until the commercial fertilizer or stable manure, has had time to thoroughly decompose and assimulate with the soil. Many disasters have doubtless occurred from neglect of this precaution, and frequently the fertilizer manufacturer has been blamed for losses caused by the inexperience and haste of grower himself.

SPECIAL SAMPLES.

The source of the "special sample" is not known to this office. The sample is received by the Commissioner of Agriculture, the analysis is made and certified to him by the State Chemist.

Some instances have occurred in which complaints have been made of failure to meet the guarantee. In all such cases coming under the observation of this division, the matter has been properly adjusted between the buyer and seller to their mutual satisfaction.

The drawing of special samples in rare cases is in ocmpliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than an ounce) frequently there are no marks, numbers, or other means of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themeselves of this privilege to Section 9 and 10 of the law, which are clear and explicit, as follows:

Sec. 9. Any person purchasing any fertilizer from any manufacturer or vendor in this State for his own use, such person being a citizen of this State, may submit fair samples of said fertilizer to the Commissioner of

Agriculture for analysis. *But in order to protect the manufacturer or vendor from the submission for analysis of spurious samples, the person selecting the same shall do so in the presence of two or more disinterested persons, which samples shall be taken from one or more packages and bottled, corked and sealed in the presence of said witnesses, and this sample package or bottle placed in the hands of a disinterested person, who shall forward the same, at the expense of the purchaser, to the Commissioner of Agriculture* when the person so desires; an dupon the receipt by him o fany such sample package, the Commissioner of Agriculture is hereby authorized to require the State Chemist to analyze the same, and he shall return to such purchaser or purchasers a certificate or certificates of analysis. The certificate shall in all cases set forth the component parts of said fertilizers, with their respective qualities, date of analysis and name or names of persons submitting the samples, and to be signed by the State Chemist, who is required to keep an accurate account of the same, and the said certificate or record, when verified by the affidavit of the State Chemist, shall be competent evidence in any court of law or equity in this State.

Sec. 10. Any person purchasing any fertilizer or fertilizing material from any manufacturer or vendor who shall upon an analysis by the State Chemist, discover that he has been defrauded, by reason of adulteration or deficiencies of constitutnts elements, either in quality or quality, in the fertilizing materials so purchased, shall recover in any action he may institute, upon proof of the fact, twice the amount paid to or demanded by the manufacturer or vendor for the fertilizer or fertilizing material so purchased. But in all cases where the vendor is an agent of the manufacturer, or sub-agent of such agent, the judgment of the court shall be rendered against the manufacturer. In case any purchase be made of any manufacturer of agent of any person or persons residing out o fthe State of Florida, manufacturing, compounding or furnishing for sale, any commercial manure or manufactured fertilizer, cotton seed meal, castor pomace, tobaco stems, tobacco dust or tobacco meal. the purchaser thereof, may, at his option, proceed by attachment, as provided by law, in case of non-resident and absorbing debtors, against any such property, rights or credits of any person or persons selling, manufacturing, compounding or furnishing said manures or fertilizers, when such property, rights or credits can be found within the limits of the State."

Purchasers who desire to have their goods analyzed, and in case of deficiency, claim damage of the seller, should comply literally with the law and the following regulations:

SPECIAL NOTICE.

The attention of persons sending samples of fertilizers for analysis is called to the following:

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER SAMPLES TO THE COMMISSIONER OF AGRICULTURE.

—SECTION 15 OF LAW.

Special samples of fertilizer sent in by purchasers, under Sec. 9 of the law approved May 22, 1901. Shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed and a FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICTLTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN CR BOTTLE, WILL BE ACCEPTED FOR ANALYSIS. This rule is adopted to secure fair samples of sufficient size to make the six necessary determinations, viz: Moisture, available and insoluble phosphoric acid, ammonia and potash; and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means, of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

COPIES OF THE FERTILIZER LAW.

Citizens interested in the fertilizer law of the State, and desiring to avail themselves of its protection, can obtain a copy free of charge by sending for same to the Commissioner of Agriculture.

STANDARD COMMERCIAL FERTILIZERS

Made by Reputable Manufacturers, Compared to Irregular, Unknown Makers, or Brands.

There has been some considerable complaint this season from the cotton growing counties, of the failure to obtain satisfactory results from the use of certain "Guanos," or "Ammoniated Bone," etc. On examination, analysis and inquiry, these goods have been found to be low grades, made by some concern not generally known to the State, with no local habitation, and no State representative. Their guarantee is the ordinary cotton goods guarantee—10-1-1 or 8-2-2. Seldom do they analyze even these small amounts of fertilizing elements

This fraud is hard to prevent, and, without the hearty co-operation of the consumer, impossible to detect. A few tons are sold in a locality by glib tongued agents, or by circulars. The goods are applied, failure results. and after the damage is done, the Department is requested to assist in collecting damages. This could be readily done provided the goods were not as represented, and the manufacturers represented in the State by a reliable agent. This is seldom the case. The agent is not to be found, and no recourse is to be had.

The advice always given to consumers is to purchase only those goods made by well known manufacturers, who have factories or well known agencies located in the State.

No State has better facilities for procuring first-class commercial fertilizers than has Florida Her factories at Pensacola, Quincy, Gainesville, Jacksonville, Orlando and Tampa are well equipped, and turn out any class of goods desired, at fair prices and with full guarantee as to quality.

There are also agencies of standard well-known manufacturers of other States located in the various cities of the State, handling none but first-class goods, sold on full guarantee, with ample responsibility to protect the same.

There is no excuse for purchasing low grade or inferior goods of unknown or irresponsible parties. As a rule such goods are inferior and sold at higher proportionate prices than standard manufactures.

All reputable manufacturers publish a catalogue and price list of their goods recommended for various crops. These can be had for the asking (and frequently also contain valuable agricultural and other information besides.)

By using ordinary diligence, care and business methods, there is no reason why inferior or fraudulent goods should be used by our farmers.

But only those goods made by well-known, reputable and responsible makers. If the goods then prove not to be as represented, damages can be collected. If, however, the goods are from some practically unknown source, with no local habitation and no responsibility, it is practically impossible to obtain redress.

MONTHLY BULLETIN.

The Florida Agricultural Department publishes a "Monthly Bulletin" from March to October inclusive, for free distribution among the citizens of the State. This Bulletin contains crop and weather reports, and the reports of the State Chemist of all official, and special analysis, made during the year, rules and regulations of the department. Citizens of the State, particularly farmers and fruit growers, fertilizer manufacturers, dealers, a ndconsumers, should avail themselves of this publication and send in their request for the same.

OTHER AGRICUTURAL BULLETINS.

The United States Department of Agriculture, the State Agricultural College at Lake City, the various Experimental Stations, all publish bulletins of great value to the farmer and fruit grower. These are sent to all applicants free of charge by these Institutions on request.

As the Florida Monthly Bulletin, the State Agricultural College Bulletins on various subjects of great interest to our farmers, and the United States Agricultural Bulletins, are sent to all applicants free of charge, I urge upon our citizens the propriety of sending in their request for the same. There are few subjects of interest to our growers that have not been the subject of careful investigation by competent scientists. This information can be had for the asking. Many of the questions now vexing our farmers, fruit growers, vegetable growers, stockmen and poultrymen, as to insects, insecticides, fertilizers, diseases of animals and plants have been exhaustively treated, an immense labor has been done by the various experimental stations, and agricultural colleges, for the benefit of the farmer, it only remains for them to send in their addresses, and requests, to receive these various publications, many of which are of practical value to our Florida agriculturists, stockmen, fruit growers, and particularly the users of commercial fertilizers.

In the following list of Bulletins published by the U. S. Department of Agriculture, are a number of much interest to our Florida farmers. I have marked with a * those I consider of most value to our Florida farmers, particularly should they have Nos. 16, 19, 21, 22, 23, 24, 25, 26, 35, 36, 44, 47, 72, 76 81 82 89 90 91 98 100 102 109 129 130 and 131.

FARMERS BULLETINS.

The following is a list of the Farmers' Bulletins available for distribution, showing the number, title, and size in pages of each. Copies will be sent to any address on application to Senators, Sepresentatives, and delegates in Congress, or to the Secretary of Agriculture, Washington, D. C.:

*16. Leguminous Plants. Pp. 24.
*19. Important Insecticides. Pp. 32.
*21. Barnyard Manure. Pp. 32.
*22. The Feeding of Farm Animals. Pp. 32.
*23. Foods: Nutritive Value and Cost. Pp. 32.
*24. Hog Cholera and Swine Plague. Pp. 16.
*25. Peanuts: Culture and Uses. Pp. 24.
*26. Sweet Potatoes: Culture and Uses. Pp. 30.
27. Flax for Seed and Fiber. Pp. 16.
*28. Weeds: And How to Kill Them. Pp. 32.
29. Scouring and Other Changes in Milk. Pp. 23.
30. Grape Diseases on the Pacific Coast. Pp. 15.

31. Alfalfa, or Lucern. Pp. 24.
*32. Silos and Silage. Pp. 32.
*33. Peach Growing for Market. Pp. 24.
34. Meats: Composition and Cooking. Pp. 29.
*35. Potato Culture. Pp. 24.
*36. Cotton Seed and Its Products. Pp. 16.
*37. Kafir Corn: Culture and Uses. Pp. 12.
*38. Spraying for Fruit Diseases. Pp. 12.
*39. Onion Culture. Pp. 31.
40. Farm Drainage. Pp. 24.
41. Fowls: Care and Feeding. Pp. 24.
42. Facts About Milk. Pp. 29.
43. Sewage Disposals on the Farm. Pp. 20.
*44. Commercial Fertilizers. Pp. 24.
45. Insects Injurious to Stored Grain. Pp. 24.
46. Irrigation in Humid Climates. Pp. 27.
*47. Insects Affecting the Cotton Plant. Pp. 32.
*48. The Manturing of Cotton. Pp. 16.
49. Sheep Feeding. Pp. 24.
50. Sorghum as a Forage Crop. Pp. 20.
*51. Standard Varieties of Chickens. Pp. 48.
52. The Sugar Beet. Pp. 48.
53. How to Grow Mushrooms. Pp. 20.
54. Some Common Birds. Pp. 40.
55. The Dairy Herd. Pp. 24.
56. Experiment Station Work—I. Pp. 31.
57. Butter Making on the Farm. Pp. 16.
58. The Soy Bean as a Forage Crop. Pp. 24.
59. Bee Keeping. Pp. 32.
*60. Methods of Curing Tobacco. Pp. 16.
61. Marketing Farm Produce. Pp. 28.
63. Care of Milk on the Farm. Pp. 40.
64. Ducks and Geese. Pp. 48.
65. Experiment Station Work—II. Pp. 32.
66. Meadows and Pastures. Pp. 28.
67. Forestry for Farmers. Pp. 48.
68. The Black Rot of the Cabbage. Pp. 22.
69. Experiment Station Work—III. Pp. 32.
70. Insect Enemies of the Grape. Pp. 23.
71. Essentials in Beef Production. Pp. 24.
*72. Cattle Ranges of the Southwest. Pp. 32.
73. Experiment Station Work—IV. Pp. 32.
74. Milk as Food. Pp. 39.
75. The Grain Smuts. Pp. 20.

*76. Tomato Growing. Pp. 30.
77. The Liming of Soils. Pp. 19.
78. Experiment Station Work—V. Pp. 32.
79. Experiment Station Work—VI. PPp. 28.
80. The Peach Twig-borer. Pp. 16.
*81. Corn Culture in the South. Pp. 24.
*82. The Culture of Tobacco. Pp. 24.
*83. Tobacco Soils. Pp. 23.
84. Experiment Station Work—VII. Pp. 32.
85. Fish as Food. Pp. 30.
86. Thirty Poisonous Plants. Pp. 32.
87. Experiment Station Work—VIII. Pp. 32.
88. Alkali Lands. Pp. 23.
*89. Cowpeas. Pp. 16.
*90. The Manufacture of Sorghum Sirup. Pp. 32.
*91. Potato Diseases and Treatment. Pp. 12.
92. Experimnet Station Work—IX. Pp. 30.
93. Sugar as Food. Pp. 27.
94. The Vegetable Garden. Pp. 24.
95. Good Roads for Farmers. Pp. 47.
96. Raising Sheep for Mutton. Pp. 48.
97. Experiment Station Work—X. Pp. 32.
*98. Suggestions to Southern Farmers. Pp. 48.
99. Insect Enemies o Shade Trees. Pp. 30.
*100. Hog Raising in the South. Pp. 40.
101. Millets. Pp. 28.
*102. Southern Forage Plants. Pp. 48.
103. Experiment Station Work—XI. Pp. 32.
104. Notes on Frost. Pp. 24.
105. Experiment Station Work—XII. Pp. 32.
106. Breeds of Dairy Cattle. Pp. 48.
107. Experiment Station Work—XIII. Pp. 32.
108. Saltbushes. Pp. 20.
*109. Farmers' Reading ourses. Pp. 20.
*110. Rice Culture in the United States. Pp. 28.
111. Farmer's Institute in Good Seed. Pp. 24.
112. Bread and Bread Making. Pp. 39.
113. The Apple and How to Grow It. Pp. 32.
114. Experiment Station Work—XIV. Pp. 28.
115. Hop Culture in California. Pp. 27.
116. Irrigation in Fruit Growing. Pp. 48.
117. Sheep, Hogs, and Horses in the Northwest. Pp. 28.
*118. Grape Growing in the South. Pp. 32.
119. Experiment Station Work—XV. Pp. 31.

*120. Insects Affecting the Tobacco. Pp. 32.
121. Beans, Pears and other Legumes as Food. Pp. 32.
122. Experiment Station Work—XVI. Pp. 32.
123. Red Clover Seed: Information for Purchasers. Pp. 11.
124. Experiment Station Work—XVII. Pp. 32.
125. Protection of Food Products from Injurious Temperature. Pp. 26.
*126. Practical Suggestions for Farm Buildings. Pp. 42
*127. Important Insecticides. Pp. 42.
128. Eggs and Their Uses as Food. Pp. 32.
*129. Sweet Potatoes. Pp. 40.
*130. The Mexican Cotton Boll Weevil. Pp. 30.
131. Household Test for Detection of Oleomargarine and Renovated Butter. Pp. 11.
132. Insect Enemies of Growing Wheat. Pp. 40.
133. Experiment Station Work—XVIII.
134. TTree Planting in Rural School Grounds.
*135. Sorgham Sirup Manufacture.

BULLETIN OF THE FLORIDA AGRICULTURAL EXPERIMENT STATION

Available to the farmers of the State. Write for those in which you are interested.

No. Author. Title.
22 A. A. Persons; Fertilizer.
24 O. Clute; Annual Report.
25 A. W. Bitting; Leeches and Leeching.
26 A. W. Bitting; Big Head.
27 L. A. Washbourne; Pineapple.
28 A. W. Bitting; Liver Fluke—Southern Cattle Fever.
29 P. H. Rolfs; The San Jose Scale.
30 F. B. Moodie; The Culture of Tobacco.
32 A. A. Persons; Cotton and its Cultivation.
33 M. S. Moreman; Orange Groves.
34 A. L. Quaintance; Insect Remedies.
36 A. L. Quaintance; Insect Injurious to Grain.
37 O. Clute, W. A. Marsh; Pineapple.
38 F. B. Moodie; Tobacco in Florida.
39 S. Powers; Strawberries.
40 A. L. Quaintance; The Fall Army Worm.

No. Author. Title.

41 P. H. Rolfs; The San Jose Scale.
42 A. L. Quaintance; Some Strawberry Insects.
43 A. A. Persons; A Chemical Study of Some Typical Florida Soils.
45 A. L. Quaintance; Injurious Insects.
46 A. L. Qauintance; The Strawberry Thrips and the Onion Thrips.
48 A. L. Quaintance; Insect Enemies of the Tobacco in Florida.
49 H. E. Stockbridge; Cassava as a Money Crop.
50 P. H. Rolfs; Pineapple Fertilizers.
51 H. A. Gossard; Some Common Florida Scales.
52 H. K. Miller; Baking Powders.
53 H. Harold Hume; Some Citrus Troubles.
54 H. Harold Hume; Pecan Culture.
55 H. E. Stockbridge; Feeding with Florida Feed Stuffs.
56 H. A. Gossard; The Cottony Cushion Scale.
57 H. Harold Hume; Top-working of Pecans.
58 H. Harold Hume; Pomelos.
59 H. Harold Hume; Cauliflower.
60 H. K. Miller; Velvet Beans.
62 H. A. Gossard; Two Peach Scales.
62 H. Harold Hume; Peen-to Peach Group.
63 H. Harold Hume; Packing Citrus Fruits.
64 has. F. Dawson; Texas Fever and Salt Sick.
65 H. Harold Hume; The Kumquats.
66 H. Harold Hume; The Mandarine Orange Group.
1 H. Harold Hume; Directions for Preparation of Bordeaux Mixture.
2 H. K. Miller; Lime and its Relation to Agriculture.
3 H. Harold Hume; Seed Testing.
4 H. A. Gossard; The White Fly.
5 H. K. Miller; Basic Slag.
H. A. Gossard; Nursery Inspection (part 1).
7 H. A. Gossard; Nursery Inspection (part 2).
8. J. F. Mitchell; Care of Irish Potatoes Harvested in the Spring and Held for Fall Planting.
9. Chas. F. Dawson; Sore Head.
10 H. Harold Hume; Plants Affected by Root Knot
11 A. W. Blair; Vinegar.
12 John H. Jefferies; Seed Beds and Their Management.

No.	Author.	Title.
13	H. A. Gossard;	Treatment for San Jose Scale.
14	H. E. Stockbridge;	Beef from Velvet Beans and Cassava.
15-16	Chas. F. Dawson;	Some Poultry Pests.
17	A. W. Blair;	Preservatives in Canned Goods.
18	H. Harold Hume;	Cantaloupe Blight.
19	H. A. Gossard;	Cut Worms.
20	Chas. F. Dawson;	Hog Cholera and Swine Plague.
21	Chas. F. Dawson;	Parturient Paralysis.
22	H. K. Miller;	Nitrogen as a Fertilizer.
23	H. E. Stockbridge;	Protection Against Drought.
24	H. A. Gossard;	Orange Mites.
25	Chas. F. Dawson;	Roup.
26	Chas. F. Dawson;	Lumpy Jaw.
27	H. Harold Hume;	Cover Crops.
28	Chas. F. Dawson;	Moon Blindness.
29	A. W. Blair;	Food Adulteration.
30	Chas. F. Dawson;	Dehorning Cattle.
31	A. W. Blair;	Coffee.
32	Chas. F. Dawson;	Foot and Mouth Disease.
33	H. A. Gossard;	Red Soldier Bug or Cotton Stainer.
34	Chas. F. Dawson;	Ox Warbles.
35	A. W. Blair;	Butter.
36	Chas. F. Dawson;	Hook Worms in Cattle.

UNIFORM FERTILIZER LAWS.

The Florida fertilizer law, is based on the report of a joint committee of the "Association of American Agricultural Colleges," and the "Association of Official Agricultural Chemists," approved by the "United States Agricultural Department;" with few changes to meet local conditions. It was complied by a committee of the "Florida State Agricultural Society" with a view to protect the Florida farmer, and the manufacturer of honest commercial fertilizer, from the vendor of adulterated and inferior goods.

That it has met the requirements, and has accomplished the desired results, to a certain extent is evidenced by the higher class of goods sold in the State; the large increase in revenue, and the fact that complaints of inferior or worthless goods are of far less frequent occurrence than prior to its enactment and enforcement.

INCREASE IN REVENUE.

The financial report of the division accompany this report, shows a very considerable increase in the revenues of the division under the present law. Under the prior law the total revenues were:

Fof 1898	$ 6,336 78
For 1899	6,004 01
For 1900	8,738 78
Total	$ 21,079 57

Under the present law they were:

For 1901	$ 13,072 93
For 1902	17,188 05
For 1903	22 761 58
	$ 53,022 56

The gross; and also the net revenue for 1903, being more than double the amount received for the three years 1898, 1899 and 1900 under the old law.

This increase I attributed not only to the increased sale of commercial fertilizers, but to the better understanding of the law, the closer inspection, and rigid enforcement o fthe law by the Hon. B. E. McLin, Commissioner of Agriculture and his assistants.

While this financial result is gratifying; as it largely increases the states revenue.

The fact that the close inspection has so materially increased the value of the goods sold to the consumer, has paid a much larger sum individually to our farmers. The increase in the grade of goods sold, (and decrease in deficiencies in guarantees) has been not less than 10 per cent. average—as the average price for the year was $33.00, the increase in value per ton has averaged $3.30 or more than $290,000 in value, received by our consumers for the same amount of exepnditure.

STATE LABORATORY.

The legislature of 1903, granted the request for an appropriation of $2,285.00 for enlarging the State Laboratory, and providing suitable and modern apparatus, I am pleased to say the State Laboratory is now well equipped with all necessary apparatus for agricultural, and fertilizer analysis and for such other determinations, as may legitimately be required of it. It is now conveniently equipped with adequate room for its various apparatus and office, and will compare favorably with similar laboratories throughout the United States.

Modern apparatus, standard and specially designed—have been installed shelving, closets, and convenience for rapid work provided. The State has now a laboratory fitted to meet the increasing demands of her citizens.

PURE FEED STUFFS.

During the year a number of "Feed Stuffs" "Mixed grain," the refuse of the starch factories "Distillers grains", gluten feeds, etc., have been sent in for examination. Samples of bran largely adulterated with ligneous matter, corn cobs and chaff. These various feeds have more or less value, and if sold on their merits and according to their feeding value, should not be prohibited; they should, however, be sold on a guarantee as to their actual content of nitrogen (or protein) phosphoric acid, starch and fat—they should be required to state in plain terms the actual food value of the material and a standard of value fixed therefor, as in fertilizers. The fact that Florida has no law requiring this guarantee, has caused the State to be flooded with these inferior feeds, and has destroyed the market for pure wheat brand, and similar well known cattle foods. A law similar to that of other States, notably North Carolina and New Jersey, would be of great benefit to our stock men and dairy men. It should be plain in its terms, with a reasonable inspection fee, or license fee, to cover the expense of inspction and analysis. It should be made the duty of some State officer to inspect, these various "stock feeds". An act following the general lines of the fertilizer law governing the sale of "concentrated" or "mixed feeds," would be of great value to our citizens, and prevent the imposition of inferior stock feed; and encourage the sale of a better quality this important item in agricultural economy.

PURE FOOD, DRUGS, ETC.

A pure food law was enacted during the session of 1903. There is no provision, however, for its enforcement, no inspector provided for; no funds appropriated and no officer charged with its enforcement; that such a law—a practical law—is necessary is very evident, from the presence of adulterated, and inferior foods, etc., sold throughout the State.

STANDARD OF PURITY FOR FOOD PRODUCTS.

A standard of purity for food products has recently been adopted by the United States Department of Agriculture—this standard has been compiled by eminent chamists and specialists appointed for the purpose. That such a standard should be adopted by the State; and dealers required to comply therewith; is patent to any one who will consider the importance of the question.

COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent. and above in ammonia, 2 per cent. or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its Commercial value is as follows:

8 per cent. ammonia @ $3.00	$24.00
2 per cent. available phosphate @ $1.00	2.00
1½ per cent. potash @ $1.10	1.65
	$27.65

The commercial value being in excess of the market value.

There is a quantity of cotton seed meal offered in the State labeled "For feeding purposes only." These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent. potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia	$13.50
1¾ per cent. phosphoric acid	1.75
1½ per cent. potash	1.65
Commercial value	$16.90

These goods are sold at $1.00 to $2.00 per ton less than prime meal Their relative value is $10.75 less than prime meal. There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of ammonia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis and pay for the actual content of the valuable elements only.

CHEMICAL EQUIVOLENTS.

Under the law the regulations of the department chemical equivolents of the three essential elements, Ammonia, Available Phosphoric Acid, and Potash, are not allowed in the guarantee. A few instances have been noted, particularly in cotton seed meals, when the Ammonia is guaranteed, and followed by a statement of the protean contents:

As.	Ammonia	5 per cent.
	Protean	$31\frac{1}{2}$ per cent.
Or	Ammonia	8 per cent.
	Protean	50 per cent.

Such a guarantee is misleading, as the terms "Ammonia" and "Protean," are equivalent, and only represent the "Nitrogen" (or ammonia) content of the goods.

Multiplying the nitrogen by 1.21 gives the ammonia thus, 3 per cent. nitrogen X1.21 gives ammonia 3.63 per cent. or nitrogen 3 per cent. X 6.25 gives "Protean" 18.75 per cent.

FORMULAS FOR COTTON.

The following formulas for cotton are the result of careful experiments by trained investigators on worn siol. It was found that cotton required a combination of nitrogen, phosphoric acid and potash. Phosphoric acid is the dominant element, however, with nitrogen standing next in importance. The relative proportion of the three important elements of plant food is one part nitrogent, two and a half of phosphoric acid, and three-fourths of potash. The quantities required by a crop of 300 pounds of lint cotton per acre are nitrogen 20 pounds, phosphoric acid 50 pounds, and potash 15 pounds. The different formulas given below are so calculated as to contain very nearly these quantities of the three important elements, and are so varied as to meet the requirements and convenience of almost every farmer. No one formula can be said to have any special advantage over the other; just use the one you can get together with the greatest convenience and least cost to yourself. Each one will analyze about 20 pounds of nitrogent, 50 pounds of phosphoric acid, and 15 pounds of potash in the whole formula. Fertilizers may be applied either in drill or broadcast where used liberally, but if used sparingly drilling is considered preferable. Each formula represents the amount to be applied per acre to get the best results.

Muriate of Potash	30 lbs.
Acid Phosphate	334 lbs.
Nitrate of Soda	125 lbs.

Muriate of Potash	20 lbs.
Acid Phosphate	281 lbs.
Cotton Seed Meal	285 lbc.

Cotton Seed Hull Ashes	45 lbs.
Acid Phosphate	261 lbs.
Cotton Seed Meal	286 lbs.

Wood Ashes (unleached)	164 lbs.
Acid Phosphate	261 lbs.
Cotton Seed Meal	286 lbs.

Muriate of Potash	30 lbs.
Acid Phosphate	334 lbs.
Dried Blood	167 lbs

Muriate of Potash	10 lbs.
Acid Phos. with Pot. (2 P. C., $K_2 O$)	312 lbs.
Cotton Seed Meal	286 lbs.

Kainit	58 lbs.
Acid Phosphate	300 lbs.
Nitrate of Soda	70 lbs.
Stable Manure	2000 lbs.

Muriate of Potash	20 lbs.
Acid Phosphate	300 lbs.
Nitrate of Soda	64 lbs.
Cotton Seed	13½ bus.

If you want to buy the goods already made, write to the manager of fertilizer factory nearest you and ask for a goods to analyze as follows:

	Per Cent.
Available Phosphoric Acid	7.00
Ammonia	3.00
Potash	2.50

Use 400 pounds per acre.

If you prefer to make the goods yourself, buy 14 per cent, acid phosphate, kainit and cotton seed meal. and make up this mixture for each acre you intend to plant

	Pounds.
Acid Phosphate	200
Cotton Seed Meal	145
Kainit	80

If you want to plant ten acres then buy ten times those quantities and mix together. The mixture will analyze about as above, 7 per cent. available, 3 per cent. ammonia and 2½ per cent. potash.

FORMULAS FOR VEGETABLES.

As vegetable growing for the early markets is one of the most important industries of the State a few accepted formulas, have been selected from those recommended by various Experimental Stations, and from the experience of practical growers and manufacturers of standard commercial fertilizers. It is conceded that ammonia (or nitrogen) is required in relatively large quantities for succulent crops, such as, cabbage, celery, lettuce, cucumbers, string beans, and for young fruit trees, to induce growth.

That phosphoric acid, is required for fiber production, and to mature the woody parts of plants.

That potash is demanded by starch and sugar producing plants, potatoes, beets, sugar cane, peaches, oarnges, pineapples, etc., to mature their sugars and starches. The predominate element required for different classes of vegetables or plants, is other things being equal.

For foliage crops, cabbage, lettuce, spinage, etc., ammonia. For woody plants, and for fiber phosphoric acid. For fruits, sugar and starch productions, potash.

VEGETABLE FORMULAS.

Crops	Ammonia.	Av'ble Pho. Acid.	Potash.
Celery	7 per cent.	5 per cent.	8 per cent.
Cabbage	5 per cent.	5 per cent.	7 per cent.
Spinage	5 per cent.	8 per cent.	6 per cent.
Asparagus	5 per cent.	7 per cent.	8 per cent.
Tomatoes	5 per cent.	6 per cent.	7 per cent.
Average	5.4 per cent.	6.1 per cent.	7.2 per cent.
Beans	3 per cent.	7 per cent.	7 per cent.
Irish Potatoes	6 per cent.	7 per cent.	8 per cent.
Sweet Potatoes.	3 per cent.	7 per cent.	8 per cent.
Peas	3 per cent.	7 per cent.	7 per ecnt.
Egg Plant	5 per cent.	6 per cent.	7 per cent.
Average	4 per cent.	6.8 per cent.	7.2 per cent.
Fruit Crops	3 per cent.	7 per cent.	10 per cent.
Corn	3 per cent.	7 per cent.	4 per cent.
Cassava	3 per cent.	7 per cent.	4 per cent
Sugar Cane	3 per cent.	7 per cent.	6 per cent.
Strawberry	3 per cent.	7 per cent.	6 per cent.
Average	3 per cent.	7 per cent.	6 per cent.

In conslusion, I desire to again call your attention to the industry, constant carefulness and eminetly scientific work, of the Assistant State Chemist, Mr. M. G. Donk; to whos efforts, much of the present high standing of the State Laboratory is due. In no case has an appeal from the determinations of the State Laboratory been decided adversely to the State Chemist. To the Commissioner of Agriculture, the Hon. B. E. McLin, I am under many obligations, for his courteous, firm, and prompt decisions, in matters pertaining to this division of the Agricultural Department of the State, and for his uniform maintenance of the fertilizer law, in decisions in matters of appeal from the State Chemist.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. MARION G. DONK, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.
(Samples taken by purchaser).

NAME OF BRAND	Laboratory No	Moisture	Phosphoric Acid			Ammonia	(Potash K20)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer	255	.....	5 61	2 32	7 93	2 57	10 85	H. R. Harris, Galloway, Fla.
Lime Kiln Ashes	256	19 95	0 55	0 64	1 19	.....	1 76	Schroeder & Auginbaw, Quincy, Fla.
Fertilizer No 1	257	.....	4 66	1 16	5 82	5 69	6 73	W. I. Minor & Son, Coleman, Fla.
Fertilizer No 2	258	.....	4 49	1 24	5 73	6 00	6 23	“ “ “ “ “
Fertilizer	259	8 45	6 04	1 54	7 58	2 32	8 76	W. F. Dees, Kathleen, Fla.
Fertilizer	260	11 65	7 68	1 43	9 11	2 15	11 69	C. W. Flanagan, Lakeland, Fla.
Sulphate of Potash	261	0 70	.....	.....	.....	.....	51 16	“ “ “ “
Blood and Bone	262	7 55	8 05	10 25	18 30	4 85	.....	Willson & Toomer, F't'zer Co , Jacksonville
Special Mixture	263	9 00	6 62	1 39	8 01	4 00	10 10	“ “ “ “ “
Special Mixture No. 3	264	5 15	3 99	6 23	10 22	4 00	8 55	“ “ “ “ “
Blood and Bone	265	5 10	9 43	7 88	17 31	5 23	.....	“ “ “ “ “
Fine Ground Bone	266	7 60	8 59	8 88	17 47	5 94	.....	“ “ “ “ “
Florida Special Pineapple Fertilizer	267	4 55	2 76	5 71	8 42	4 19	9 75	“ “ “ “ “
Cottonseed Meal	268	6 85	.....	.....	2 29	8 48	1 54	“ “ “ “ “
Special Mixture	269	7 90	8 61	0 57	9 18	.....	19 66	“ “ “ “ “

BUREAU OF FERTILIZERS--Continued·

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Blood and Bone, H. G.	270	6 85	5 02	2 44	7 46	8 03	.....	Wil'son & Toomer F't'zer Co., Jack'ville, Fla.
Ideal Blood and Bone	271	5 80	8 73	7 26	15 99	5 51	.....	" " " " " "
Fertilizer	272	8 85	0 64	1 42	12 06	1 80	4 65	H. M. Floy, Ellenton, Fla.
Raw Pebble Phosphate	273	.....	.....	.....	29 02	.....	.....	M. Sellers, Wachula, Fla.
Fertilizer	274	2 50	7 27	12 85	20 12	0 51	11 37	Schroeder & Auguinbaw, Quincy, Fla.
Ashes	275	.....	.....	.....	.....	.....	1 62	Chas. R. Tysen, Jacksonville, Fla.
Tobacco Dust	276	.....	.....	.....	.....	1 97	1 76	" " " "
Hog Tankage	277	8 70	5 23	2 62	7 85	12 04	.....	Cudahy Packing Co., Kansas City.
Cattle Tankage	278	7 25	7 93	7 35	15 28	6 99	.....	" " " " "
Fertilizer No. 1 (Ashes)	279	4 55	.....	.....	.....	.....	4 39	George Kuhn, Pine Castle, Fla.
" " 2 "	280	4 80	.....	.....	.....	.....	4 28	" " " "
" " 3 "	281	4 00	.....	.....	.....	.....	4 40	" " " "
" " 4 "	282	3 72	.....	.....	.....	.....	4 08	" " " "
" " 5 "	283	7 30	.....	.....	.....	.....	4 32	" " " "
Fertilizer	284	8 90	5 72	0 88	6 60	3 58	12 84	W. A. Hogan, Osona, Fla
Cotton Seed Meal	285	.....	.....	.....	.....	6 75	.....	R. B. Penton, McDavid, Fla.
Kainit	286	5 15	.....	.....	.....	.....	12 00	Frank Adams, Jasper, Fla.
Fertilizer	287	5 95	5 85	2 05	7 91	0 20	18 00	Stanyarne Burrows, Kissimmee, Fla.
Canada Ashes	288	18 00	.....	.....	.....	.....	3 55	Willson & Toomer Fert. Co., Jack'ville, Fla.
Ashes	289	18 25	.....	.....	.....	.....	4 71	" " " " " "
Ashes	290	13 15	.....	.....	.....	.....	4 23	" " " " " "

BUREAU OF FERTILIZERS—Continued.

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid. Available	Phosphoric Acid. Insoluble	Phosphoric Acid. Total	Ammonia	Potash (K2O)	BY WHOM SENT
H. G. Tankage	291	8 35	3 89	2 02	5 91	10 43		Wilson & Toomer Fert. Co., Jacksonville, Fla.
Sulphate of Potash	292	0 06					49 64	John J. Lee, Orlando, Fla.
H. W. Ashes	293	0 85					3 79	Trugate & Co., Port Ogden, Fla.
Ashes	294	18 40					1 50	J. R. Tysen, Jacksonville, Fla.
Cotton Seed Meal	295					8 34		J. R. Tysen, Jacksonville, Fla.
Sulphate of Potash	296						48 36	J. A. O. Kane, Pebble, Fla.
H. W. Ashes No. 1	297						2 58	H. Price Williams, Miami.
H. W. Ashes No. 2	298						3 89	H. Price Williams, Miami.
Fertilizer No. 3	299		2 81	2 63	5 44	8 00	10 74	H. Price Williams, Miami.
Fertilizer No. 4	300		6 24	0 23	6 47	4 02	12 99	H. Price Williams, Miami.
Fertilizer	301		7 74	0 67	8 41	4 71	7 22	R. H. Brown, Youmans, Fla.
Fertilizer	302		7 23	2 28	9 51	4 11	5 48	S. E. Wiggins, Youmans, Fla.
Kainit	303	6 55					13 75	Armour Fertilizer Works. Jacksonville, Fla.
Fertilizer	304	8 20	5 64	2 94	8 58	2 73	12 99	Planters Manufacturing Co. Lake Mary Fla
Fertilizer	305	3 45	5 63	1 02	6 65	2 62	11 62	James Hicks, Lakeland, Fla.
Fertilizer	306	3 80	5 39	1 83	7 22	2 80	10 80	N. C. Peters, Lakeland, Fla.
Fertilizer	307	9 60	6 47	2 02	8 49	4 27	5 57	W. B Hicks, Lakeland, Fla.
Fertilizer	308	5 40	5 43	1 44	6 87	2 48	9 76	J. W. Richards, Gillette, Fla.
Fertilizer	309	6 30	5 20	1 60	6 80	2 60	10 76	Brown Griffin, Lakeland, Fla.
Fertilizer	310	9 58	6 64	1 91	8 55	2 19	11 07	J. E. McGraw, Lakeland, Fla.
Fertilizer	311	8 75	6 94	1 99	8 93	4 21	5 52	W. A. Merryday, & Co., Palatka, Fla.

BUREAU OF FERTILIZERS—Continued.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer No. 1	312	6 90	5 34	2 80	8 14	4 53	5 84	J. R. Davis, Bartow, Fla.
Fertilizer No. 2	313	8 10	5 63	3 32	8 95	4 70	6 46	J. R. Davis, Bartow, Fla.
Fertilizer	314	6 65	10 79	0 35	11 14	.....	21 14	J. E. Berry, Wachulla, Fla.
Delray Special	315	10 95	3 28	0 49	3 77	5 04	2 41	Armour Fertilizer Works Jacksonville, Fla.
Special Mixture No. 1	319	9 55	6 93	2 99	9 92	3 50	5 54	Z. C. Chamblis, Ocala Fla.
Special Mixture No. 2	320	7 85	6 50	1 64	8 14	4 28	6 53	Z. C Chambliss, Ocala, Fla.
Ground Bone	322	3 70	12 87	12 65	25 52	3 04	...	A. L. Wilson, Quincy, Fla.
Fertilizer No. 1	323	.....	7 82	1 31	9 13	4 07	7 61	Tampa Fertilizer Co., Tampa, Fla.
Fertilizer No. 2	324	.....	6 15	2 25	8 40	2 40	6 77	Tampa Fertilizer Co., Tampa, Fla.
Fertilizer No. 3	325	.....	8 58	1 71	10 29	1 98	15 90	Tampa Fertilizer Co., Tampa, Fla.
Blood, Bone and Potash	326	.....	7 77	1 96	4 73	6 63	10 38	W. Frederickson, Jensen, Fla.
Cotton Seed Meal	327	.....	.....	.....	.....	7 60	.....	E. H. Slappy, Havanah, Fla.
Sulphate of Potash B	328	1 80	.....	.....	.....	.....	48 44	C. H. Dorman, Houston, Fla.
Fertilizer A.	329	7 95	7 60	3 66	11 26	5 30	6 97	C. H. Dorman, Houston, Fla.
Fertilizer No. 3	330	11 30	7 67	1 41	9 08	4 34	5 36	W. A. Merryday & Co., Palatka, Fla.
Fertilizer No. 4	331	11 00	6 22	1 71	7 93	4 44	3 17	W. A. Merryday & Co., Palatka, Fla.
Cremo Brand, Cotton Seed Meal	332	.....	.....	.....	.....	4 32	.....	S. L. Ditto & Co. Jacksonville, Fla.
H. G. Blood and Bone	333	.....	5 86	4 46	10 32	10 43	.....	Cudahy Packing Co., Jacksonville, Fla.
Fertilizer	334	.....	8 23	1 20	9 43	2 55	1 80	A. L. Wilson & Co., Quincy, Fla.
Fertilizer	334	3 90	5 54	1 37	6 91	2 65	10 31	A. V. Walter, Gallaway, Fla.
Fertilizer	336	7 80	6 37	1 97	8 34	4 94	8 78	C. W. Dallom, Ellenton, Fla.

BUREAU OF FERTILIZERS—Continued.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	337	6 00	2 39	1 86	4 16	8 41	9 99	C. F. Way, Jensen, Fla.
Fertilizer	238	15 75	6 56	0 66	7 22	2 46	9 36	S. L Langford, Hyman, Fla.
H. G Blood and Bone	339	6 00	3 64	1 64	5 28	10 87		John Donk, Tallahassee, Fla.
Kainit	340						12 56	W. M. Girardeau, Monticello Fla.
Fruit and Vine Fertilizer	341	14 35	7 58	1 83	9 41	2 55	2 31	Henry Varnes, Johnstown. Fia.
Cave Earth	342				4 60	11 70	0 90	W. D. Hendrickson, Palm Beach, Fla.
Fertilizer	343	10 35	9 26	1 72	10 98	1 79	14 22	J. D. Rushing, Tampa, Fla.
Fertilizer No. 1	344	10 55	8 76	0 00	8 76	6 24	9 64	A C. Haynes, DeLand, Fla.
Nitrate of Soda No. 2	345	1 60				18 69		A. C. Haynes, DeLand, Fla
Fertilizer No. 3	346	6 25	4 33	5 72	10 05	8 87		A. C. Haynes, DeLand, Fla.
Indian Mound Earth	347		3 26	4 56	7 82			I. W. Fuller, Braidentown, Fla.
Fertilizer	348	6 60	6 95	1 53	8 48	4 15	9 45	W. A. Bispham, Ellenton, Fla.
Fertilizer	349		15 63	1 60	17 23	4 19	1 80	O. P. Shepherd, Winter Park. Fla.
Fertilizer	350		10 77	3 31	14 05	3 92	2 95	R. L. Cowart, Ona, Fla.
Fertilizer No. 1	351		6 85	3 67	10 52	4 84	4 63	W. W. Beney, Stuart, Fla
Fertilizer (Leached)	352		7 05	3 64	10 69	4 34	4 93	W. W. Beney, Stuart, Fla.
Fertilizer	353		6 60	1 81	8 41	3 42	5 45	C. M. Smith, Oxford, Fla.
Bone Black	354		2 89	31 85	34 74			John Grey, Bona Venture, Fla.
Pulverized Steamed Bone	356	7 75	13 66	10 11	23 77	3 64		H. H. Sample, Ft Pierce, Fla.
Fertilizer	357	3 60	8 20	4 33	12 53	4 65	6 88	James Anderson, Ft. Pierce, Fla.
Fertilizer	358		7 53	1 10	8 63	1 83	6 59	R. P Bryan, Colman, Fla
L G. Blood and Bone	359		7 45	3 53	10 98	6 72		Cudahy Packing Co., Jacksonville, Fla.

BUREAU OF FERTILIZERS—Continued.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	360	....	8.22	4.54	12.76	1.97	10.70	J, E. Crow, Ossining, N. Y.
Fertilizer	361	12 60	6 43	2 36	8 79	2 34	8 74	Wm. E. Earle, Tangarine, Fla.
Canad H. W. Ashes	362	....	....	....	....	....	4 94	L D. Klutes, St. Petersburg, Fla.
Special Mixture	363	5 15	5 91	2 60	8 51	6 17	8 37	C. F Omstead, Ft. Pierce, Fla.
Fertilizer No. 1	364	....	3 19	2 07	5 26	....	13 68	Schroeder & Auginbaw, Quincy, Fla.
Fertilizer No 2	365	....	5 94	7 60	13 54	....	13 54	“ “ “ “
Fertilizer———	366	....	3 47	1 69	5 16	....	8 60	“ “ “ “
Sulphate of Ammonia	367	....	....	....	....	23 34	....	F. D. Waite, Palmetto, Fla.
Nitrate of Soda	368	....	....	....	....	17 70	....	“ “ “
Dissolved Bone	369	....	19 77	0 25	20 02	....	....	“ “ “
Acid Phosphate	370	....	14 44	5 56	20 00	....	....	“ “ “
Special Mixture	371	....	8 30	2 35	10 65	4 12	14 03	“ “ “
Nitrate of Potash	372	....	....	....	....	12 09	41 40	“ “ “
Sulphate of Potash	373	....	....	....	....	....	49 40	“ “ “
Special Mixture No 2	374	13 75	7 85	0 10	7 95	3 85	11 16	“ “ “
Blood and Bone	375	....	3 23	1 97	5 20	10 05	....	A. N. Hoofnagh, Ft. Pierce, Fla.
L. G, Sulphate of Potash	376	....	....	....	....	....	26 70	“ “ “ “
Dark Cotton Seed Meal	377	....	....	....	1 86	4 34	1 47	Fla. Cotton Oil Co., Jacksonville, Fla.
Tobacco Dust	378	....	....	....	....	2 68	9 43	James Holmes, Jensen, Fla.

BURLAU OF FERTILIZERS—Continued.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insolub'e	Total			
Tobacco Dust	379	....	....	....	....	0 93	3 37	A. B. Mayer Neptune, Fla.
Special Mixture	380	....	3 72	2 60	6 32	3 61	4 95	James Andrews, Ft. Pierce, Fla.
Blood and Bone	381	....	3 44	1 58	5 02	10 51	....	Dr. Henry Ehrlick, t. Pierce, Fla.
Blood and Bone No. 2	382	....	2 83	3 89	5 72	8 98	....	" " " " "
Potash (L. G. Sulphate)	383	....	....	....	....	....	25 74	" " " " "
Potash No. 2	384	....	....	....	....	....	25 90	" " " " "
H. G Sulphate of Potash	385	....	....	....	....	....	49 24	Mrs. D. Justicc, Ft. Pierce, Fla.
Ground Castor Pomace	386	....	....	....	....	6 22	0 47	" " " " "
Cotton Seed Meal	387	....	....	....	2 29	7 08	0 80	" " " " "
Fertilizer	388	....	8 02	1 10	9 12	3 85	9 97	C. F. Wall, Seaside, Fla.
Dark Gotton Seed Meal	389	....	....	....	1 87	4 53	1 48	Florida Cotton Oil Co., Jacksonville, Fla
Pineapple Formula A	390	....	....	....	1 71	4 77	1 99	R L. Goodwin, Ft. Pierce, Fla.
Pineapple, Formula B	392	....	....	....	1 60	4 55	6 23	" " " "
Fertilizer	392	....	4 63	3 71	8 38	4 55	7 90	Jas. E. Andrews, Tibbals, Fla.
Fertilizer No. 1	393	....	8 07	0 79	8 86	3 00	4 98	H. Crutcher, Jacksonville, Fla.
Mixed Fertilizer No. 2	394	....	8 49	0 86	9 35	3 67	5 02	" " " "
Mixed Fertilizer No. 3	395	....	5 27	0 78	6 05	4 25	13 78	" " " "
Mixed Fertilizer No. 4	396	....	6 75	1 33	8 08	4 04	5 19	" " " "

BUREAU OF FERTILIZER—Continued.

NAME OR BRAND.	Laboratory No.	Moisture.	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT
			Available	Insoluble	Total			
Mixed Fertilizer No. 5	397	.....	10.17	1.55	11.75	2.26	2.35	H. Crutcher, Jacksonville, Fla.
Mixed Fertilizer No. 6	398	.....	9.28	1.02	10.30	4.41	3.55	" " " "
Mixed Fertilizer No. 7	399	.....	10.16	0.97	11.13	1.13	1.41	" " " "
Cotton Seed Meal	400	.....	.....	.....	2.36	7.27	1.71	W. A. Bours & Co., Jacksonville, Fla.
Mixed Fertilizer No. 9	401	14.10	5.61	1.14	6.75	2.55	10.88	H. Crutcher, Jacksonville Fla.
Mixed Fertilizer No. 8	402	11.90	8.28	1.41	9.67	3.06	10.75	" " " "
Loggerhead Sponge No. 1	403	.....	.....	.....	.....	1.80	.....	C L. Huddleston, Miami, Fla.
Loggerhead Sponge No. 2	404	.....	....	.....	......	1.60	......	" " " "

BUREAU OF FERTILIZERS—Continued.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Mixed Fertilizer............	406	9.40	5.55	0.68	6.23	5.60	6.00	H. Crutcher, Jacksonville, Fla.
Baltimore Soluable Bone....	407	.....	7.44	4.32	11.76	0.57	1.03	Jossiah Ammons, Ponce De Leon.
Baltimore Soluable Bone....	408	.....	7.74	4.52	12.20	0.76	1.07	J. W. Whitton, Ponce D eLeon.
Fertilizer No. 1............	409	12.40	10.09	5.04	15.13	2.14	1.40	H. F. Addison, Marianna, Fla
Fertilizer No. 2............	410	14.80	12.63	3.65	16.28	0.00	0.49	H. F. Addison, Marianna, Fla
Rock Phosphate............	411	.....	.....	....	33.46	....	.....	W. D. Sheppard, Irvin, Fla.
Soft Phosphate No. 1.......	412	.....	.....	....	16.00	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Soft Phosphate No. 2.......	413	.....	.....	....	16.82	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Soft Phosphate No. 3.......	414	.....	.....	....	22.08	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Soft Phosphate No. 5.......	415	.....	.....	....	29.59	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Rock Phosphate No. 6.......	416	.....	.....	....	31.46	....	.....	A. L. Eichelbeiger. Ocala, Fla.
Soft Phosphate No. 7.......	417	.....	.....	....	18.98	....	.....	A. L. Eichelbeiger, Ocala, Fla.
Mixed Pebble Phosphate....	419	.....	.....	....	26.88	....	.....	E. E Hope, Tarpon Springs, Fla
Raw Bone Phosphate Rock..	421	.....	.....	....	32.80	....	.....	J. F. Shuler, Coe Mills, Fla.
Cave Earth	422	.....	.....	....	10.04	1.01	.....	U. D. Hendrickson, Palm Beach.
Fertilizer	423	.....	9.97	0.81	10.78	1.95	1.13	Charles E. Bazzell. Greenwood.

BUREAU OF FERTILIZERS—Continued.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	P otash (K20	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	424	.....	7.79	3.86	11.65	0.51	3.06	J. W. Whitter, Ponce De Leon.
Dark Cotton Seed Hulls	425	.....	.....	....	0.36	1.13	1.04	W. A. Merryday & Co. Palatka.
Cotton Seed Meal	426	.....	.....	....	.....	8.21	.....	Tallahassee C. O. Co., Tallahassee.
Cave Earth	427	.....	.....	....	10.52	2.27	.....	U. D. Hendrickson, Palm Beach.
Cave Earth	428	.....	.....	....	7.28	0.17	.....	U. D. Hendrickson, Palm Beach.
Cave Earth	429	.....	.....	....	17.76	1.19	.....	U. D. Hendrickson, Palm Beach.
Desolved Bone Black No. 1	430	.....	18.67	0.33	19.00	....	.....	The Atwood Co., Marrianna, Fla.
H. G. Sulphate of P't'sh No. 1	431	.....	.....	....	.....	....	52.50	The Atwood Co., Marrianna, Fla.
Acid Phosphate No. 100	432	.....	15.44	0.72	16.21	....	.....	Armour Fert'. Wk's., Jacksonville.
Fertilizer	433	.....	4.70	3.42	8.12	3.43	4.95	W. M. Odell, Oxford, Fla.
Tobacco Dust	434	.....	.....	....	.....	1.39	1.58	R. L. Goodwin, Ft. Pierse.
Acid Phosphate	435	8.90	16.56	1.63	18.19	....	.....	J. S. Sims, Marianna, Fla.
Special Mixture	436	5.90	4.97	2.61	7.58	7.38	10.74	R. L. Goodwin, Ft. Pierce
Mnriate of Potash	437	.....	.....	....	.....	....	51.04	Goulding Fertilizer Co. Pensacola.
Kainit	438	.....	.....	....	.....	....	13.06	Goulding Fertilizer Co. Pensacola
Export Phosphate	439	.....	18.14	1.55	19.69	....	.....	Goulding Fertilizer Co. Pensacola

BUREAU OF FERTILIZER—CONTINUED.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid.			Ammonia.	Potash (K20.)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Fertilizer	440	....	6.40	1.80	8.20	1.74	10.67	G. W. Wheeler, Griffin, Fla.
Cotton Seed Meal	441	....	.....	.....	.....	7.93	.....	Tallahassee Cotton Oil Co.
Cotton Seed Meal	442	....	.....	.....	2.65	8.55	1.81	W. A. Bour's & Co., Jacksonville.
Special Mixture	443	....	11.74	10.45	22.19	3.08	6.53	C. F. Olmstead, Ft. Pierce, Fla.
Special Mixture	444	....	3.04	1.99	5.03	6.91	9.11	C. F. Olmstead, Ft. Pierce, Fla.
Special Mixture	445	....	3.03	1.33	4.36	4.14	8.36	W. J. Dyer, Stuart, Fla.
Tobacco Dust	446	....	.....	.....	.....	2.65	9.04	W. J. Dyer, Stuart, Fla.
Soft Shosphate	447	....	.....	.....	18.56	.....	....	Tillman Ozias, Seven Oaks, Fla.
Raw Bone Meal	448	....	9.53	17.68	27.21	4.05	.....	C. A. Justice, Ft. Pierce, Fla.
Bone Flour	449	....	12.15	14.63	26.78	3.03	.....	C. A. Justice, Ft. Pierce, Fla.
Sulphate of Potash	450	....	.....	.....	.....	.....	50.56	C. A. Justice, Ft. Pierce, Fla.
Dried Blood	451	....	.....	.....	.....	17.24	....	C. A. Justice, Ft. Pierce, Fla.
Blood and Bone	452	....	9.27	7.21	16.48	6.62	....	Manatee Fert. Co., Palmetto, Fla.
Fish Scrap.	453	....	5.95	3.28	9.23	11.65	.....	Manatee Fert. Co., Palmetto, Fla.
Pebble Phosphate.	454	....	.....	.....	31.76	.....	.....	C. A. Merrin, Plant City, Fla.
Fertilizer	455	....	6.67	2.21	8.88	2.00	11.22	A. S. Nelson, Dunedin, Fla.

BUREAU OF FERTILIRERS—Continued.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid			Ammonia.	Potash (K20)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Fertilizer	456	.....	7.00	0.78	7.78	2.48	14.28	A. F. Wyman, Braidentown, Fla.
Fertilizer	457	.....	8.66	6.17	14.83	1.97	1.87	Saml. J. Johnson, Bascom, Fla.
West India Guano	458	.....	.....	.....	10.63	1.53	.....	U. D. Hendrickson, Palm Beach.
Pulverized Steamed Bone.	459	.....	13.60	12.19	25.79	3.53	.....	R. L. Goodwin, Ft. Pierce, Fla.
H. G. Dried Blood	460	.....	.....	.....	.....	15.90	.....	R. L. Goodwin, Ft. Pierce, Fla.
H. G. Blood and Bone....	461	.....	4.90	4.29	9.19	10.63	.....	R. L. Goodwin, Ft. Pierce, Fla.
Castor Pomace	462	.....	.....	.....	1.78	6.04	1.14	R. L. Goodwin, Ft. Pierce, Fla.
Acid Phosphate	463	6.80	16.34	1.90	18.24	.....	.....	R. M. Pett, Cypress, Fla.
Special Mixture	464	.....	6.56	0.70	7.26	1.87	5.86	R. D. Knight, Lemon City, Fla.
Fertilizer	465	.....	7.21	0.51	7.72	3.69	3.11	Chas. E. Bazzell, Kella, Fla.
Fertilizer	466	.....	.....	.....	2.80	3.34	9.46	Wm. Pomeroy, Eldred, Fla.
Cotton Seed Meal	467	.....	.....	.....	1.43	8.48	1.41	Lewis Bear & Co., Pensacola, Fla.
Pebble Phosphate No. 1..	468	.....	.....	.....	35.56	.....	.....	H. B. Wordenhoff, Plant City, Fla
Pebble Phosphate No. 2..	469	.....	.....	.....	32.17	.....	.....	H. B. Wordenhoff, Plant City, Fla
Rock Phosphate	470	.....	.....	.....	24.30	.....	.....	W. D. Sheppard, Irvine, Fla.
Pebble Phosphate	471	.....	.....	.....	31.56	.....	.....	B. W. Blount, Abbott, Fla.
Pebble Phosphate	472	.....	.....	.....	23.83	.....	.....	M. L. Guthrie, Tarpon Springs.

BUREAU OF FERTILIZERS—Continued.

For values see heading "Bureau of Fertilizers."

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample' sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The "Official Samples' taken by the State Chemist, or his assistant, on following pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a "Special Sample."

DEPARTMENT OF AGRICULTURE, DIVISION OF CHEMISTRY.

R. E. ROSE, STATE CHEMIST, ANALYSIS OF FERTILIZERS, 1903, MARION G. DONK, ASSISTANT CHEMIST.

Samples taken by State Chemist under Section 1, Act approved May 22, 1901.

NAME OF BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Gem Fruit and Vine.....	203	Guarant'd Analysis.	5	6	1	......	2 50	10	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	8 75	7 69	0 95	8 64	3 13	11 20	
Cotton Seed Meal	204	Guarant'd Analysis.	......	......	......	......	8 00	......	Florida Cotton Oil Co., Jacksonville.
		Official Analysis....	......	......	......	......	8 15	......	
Cotton Seed Meal.......	206	Guarant'd Analysis.	......	......	......	......	......	......	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......	......	......	......	8 60	......	
Cotton Seed Meal.......	205	Guarant'd Analysis.	......	......	......	......	7 50	......	American Cotton Oil Co. Americus, Ga
		Official Analysis....	......	......	......	......	8 70	......	
Cotton Seed Meal.......	207	Guarant'd Analysis.	......	......	......	......	8 00	......	Florida Cotton Oil Co. Jacksonville.
		Official Analysis....	......	......	......	......	7 31	......	

ANALYSIS OF FERTILIZERS—Continued.

Dark Cotton Seed Meal.	208	Guarant'd Analysis.	....	....	.....	......	5 00	......	Florida Cott n Oil Co., Jacksonville.
		Official Analysis....	.....	....	.....	......	4 86	......	
Castor Pomace.........	209	Guarant'd Analysis.	.....	......	.....	.....	......	......	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	.....	......	.....	......	7 00	.....	
Cuke Special	210	Guarant'd Analysis.	7 00	5 00	2 00	......	4 00	8 00	**Standard Fert. Works, Gainesville, Fla.**
		Official Analysis....	5 1[illegible]	3 53	1 81	5 34	4 23	8 16	
Corn and Cotton Specia Fertilizer..............	211	Guarant'd Analysis.	10 00	7 00	3 00	......	1 00	5 00	**Standard Fert. Works, Gainesville, Fla.**
		Official Analysis....	4 95	7 46	4 40	11 86	1 98	4 11	
Tree Grower............	212	Guarant'd Analysis.	7 00	7 00	2 00	......	5 00	5 00	**Standard Fert. Works, Gainesville, Fla.**
		Official Analysis....	5 25	3 93	3 39	7 32	6 00	4 70	
No. 1, Peruvian & Fish Guano Mixture.......	213	Guarant'd Analysis.	10 00	5 00	1 00	......	4 50	5 00	Florida Fertilizer Man'f'g Co., Gainesville, Fla.
		Official Analysis...	8 85	5 00	2 23	7 23	4 94	5 97	
Strawberry Fruiter....	214	Guarant'd Analysis.	10 00	5 00	2 00	......	2 00	10 00	Florida Fertilizer Man'f'g Co. Gainesville Fla.
		Official Analysis...	8 80	6 91	1 68	8 50	3 16	8 06	
No. 3, Blood, Bone anc Potash...............	215	Guarant'd Analysis.	10 00	4 00	2 00	......	4 00	4 00	Florida Fertilizer Man'f'g. Co., Gainesv lle, Fla.
		Official Analysis...	9 25	5 66	1 72	7 38	3 98	5 11	
Goulding's Meal Mixture............	217	Guarant'd Analysis.	12 00	9 00	1 00	......	1 00	1 00	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 30	11 39	0 60	12 49	1 29	1 55	
Export Super Phosphate	218	Guarant'd Analysis.	12 00	18 00	1 00	......	......	.....	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis...	10 70	19 33	0 44	19 71	......	.....	

ANALYSIS OF FERTILIZERS—Continued.

Cotton Seed Meal	219	**Guarant'd Analysis.**					8 00		Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis.					8 98		
Bone Compound	223	Guarant'd Analysis.	12 00	8 75	1 00		2 00	1 50	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis.	11 25	8 27	5 86	14 13	2 26	1 57	
Cotton Seed Meal	224	**Guarant'd Analysis.**					8 24		Georgia Cotton Oil Co., Albany, Ga.
		Official Analysis.					7 76		
Cotton Seed Meal	225	**Guarant'd Analysis.**					8 24		Georgia Cotton Oil Co., Albany, Ga.
		Official Analysis.					7 93		
Acid Phosphate	226	**Guarant'd Analysis.**	14 00	12 00	1 10				Mutual Fertilizer Co., Savannah Ga.
		Official Analysis.	13 90	13 54	1 16	14 71			
Cumberland Guano	227	**Guarant'd Analysis.**	14 00	8 00	1 00		2 00	2 00	Mutual Fertilizer Co, Savannah, Ga.
		Official Analysis.	13 15	9 00	1 14	10 14	2 21	1 25	
Desolved Bone Superphosphate	228	**Guarant'd Analysis.**	10 00	8 00	1 00		2 00	2 00	Cumberland Bone Phosphate Co., Portland, Me
		Official Analysis.	18 65	9 69	2 10	11 79	2 34	1 34	
Southern State Special Veg. Guano	229	**Guarant'd Analysis.**	8 00	6 00	1 00		4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis.	12 70	6 93	0 84	7 77	4 11	6 41	
Alabama Fertilizer	230	**Guarant'd Analysis.**		8 50	2 00		2 18	1 50	Va.-Car. Chem. Co., Charleston, S. C.
		Official Analysis.	10 61	8 97	2 80	11 77	2 39	1 48	
Fruit and Vine	231	**Guarant'd Analysis.**	8 09	6 00	1 00		2 50	10 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis.	8 65	7 27	0 81	8 08	2 63	10 71	

ANALYSIS OF FERTILIZERS—Continued.

Tip Top Tomato	232	Guarant'd Analysis.	8 00	7 00	1 00	....	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	10 90	8 07	1 12	9 19	4 74	4 18	
Champio Compound...	233	Guarant'd Analysis.	......	8 00	1 00	......	1 00	3 00	Va.-Car. Chem. Co., Charleston, S. C.
		Official Analysis....	14 10	9 07	1 80	10 77	0 98	4 35	
Georgia State Grange...	234	Guarant'd Analysis.	......	8 00	2 00	......	2 00	2 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	13 43	8 77	1 49	10 16	2 57	3 42	
Georgia State Standard.	235	Guarant'd Analysis.	...	8 00	2 00	.....	2 00	2 00	Va.-Car. Chem. Co., Charleston, S. C.
		Official Analysis....	13 15	8 07	4 43	12 50	1 62	1 89	
Fertilizer No. 1.........	236	Guarant'd Analysis.	10 00	5 00	2 00	......	5 00	4 00	So. Fert. Co., Orlando, Fla.
		Official Analysis....	9 25	7 08	5 55	12 63	4 91	3 73	
Extra Fruit and Vine...	237	Guarant'd Analysis.	10 00	6 00	1 00	......	2 00	14 00	So. Fert. Co., Orlando, Fla.
		Official Analysis...	9 15	6 58	1 62	8 20	2 27	13 88	
Carey's Special for Fruit	238	Guarant'd Analysis.	10 00	6 00	1 00	....	4 00	12 00	So. Fert. Co., Orlando, Fla.
		Official Analysis...	10 05	5 98	1 18	7 16	3 90	12 04	
Vegetable Fertilizer....	289	Guarant'd Analysis.	10 00	6 00	2 00	.....	5 00	6 00	So. Fert. Co., Orlando. Fla.
		Official Analysis...	10 90	5 99	1 46	7 45	4 85	5 96	
Extra Fruit and Vine (Bone)................	240	Guarant'd Analysis.	10 00	6 00	1 00	......	2 00	14 00	So. Fert. Co., Orlando. Fla.
		Official Analysis....	9 60	7 16	1 63	8 79	2 38	13 90	
No. 4 Fertilizer.........	241	Guarant'd Analysis.	10 00	6 00	2 00	......	3 00	10 00	So. Fert. Co., Orlando, Fla.
		Official Analysis...	8 08	6 00	2 50	8 50	3 16	9 73	

ANALYSIS OF FERTILIZERS—Continued.

Carey's Special for Fruit (Bone)	242	Guarant'd Analysis.	10 00	6 00	1 00	......	4 00	12 00	So Fert. Co., Orlando, Fla.
		Official Analysis....	8 90	7 30	1 44	8 64	3 98	12 83	
Fertilizer No. 2	243	Guarant'd Analysis.	10 00	6 00	2 00	......	5 00	10 00	So Fert. Co., Orlando, Fla.
		Official Analysis ...	8 95	6 35	1 96	8 31	4 86	10 10	
Orange Tree Fertilizer	244	Guarant'd Analysis.	8 00	6 00	1 00	......	2 00	10 00	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	9 50	7 22	1 91	9 13	1 97	9 23	
Ashes	245	Guarant'd Analysis.	......	......	......	......	......	5 50	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	4 70	......	......	......	......	3 75	
Lampat's Formula	246	Guarant'd Analysis.	12 00	2 00	1 50	......	......	10 00	Schroeder & Auguinbau, Quincy, Fla.
		Official Analysis....	3 70	5 11	9 47	14 58	......	12 14	
Lampat's Formula No. 1	247	Guarant'd Analysis.	4 00	3 00	1 00	......	......	12 00	Schroeder & Auguinbau, Quincy, Fla.
		Official Analysis....	5 00	2 34	2 44	4 78	......	12 85	
Ashes	248	Guarant'd Analysis.	15 00	......	......	......	......	4 00	Willson & Toomer Fert. Co. Jacksonville.
		Official Analysis....	18 60	......	......	......	......	3 54	
Peruvian Guano	249	Guarant'd Analysis.	15 00	8 00	18 00	......	2 50	1 00	Willson & Toomer, Fert. Co, Jacksonville.
		Official Analysis....	12 65	7 97	24 97	32 94	2 22	0 89	
Blood and Bone Fertilizer	250	Guarant'd Analysis.	4 00	4 00	1 00	......	4 00	10 00	Barney Hart, Jacksonville, Fla.
		Official Analysis....	7 60	5 88	3 92	9 80	1 49	6 35	
L. G. Sulphate of Potash	251	Guarant'd Analysis.	......	......	......	......	......	26 00	Barney Hart, Jacksonville, Fla.
		Official Analysis....	......	......	......	......	....	27 82	

ANALYSIS OF FERTILIZERS—Continued.

Nitrate of Soda	252	Guarant'd Analysis.	......	......	......	......	......	17 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	3 05	......	......	......	......	17 88	
Canada H. W. Ashes.	253	Guarant'd Analysis.	......	......	......	......	......	4 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......	......	......	......	......	3 93	
H. G. Sulphate of Potash	254	Guarant'd Analysis.	......	......	......	......	......	49 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	....	......	......	......	......	48 72	
Double Manure Salt	255	Guarant'd Analysis.	......	......	......	......	......	26 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	......	......	......	......	......	26 60	
Blood, Bone and Potash	256	Guarant'd Analysis.	......	......	......	......	4 50	6 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	5 45	8 68	2 57	11 25	4 98	6 75	
Gem Potato Manure	257	Guarant'd Analysis.	10 00	4 00	1 00	......	4 00	11 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	6 10	6 48	0 95	7 43	4 33	10 81	
Gem Strawberry Special	258	Guarant'd Analysis.	8 00	6 00	2 00	......	4 00	10 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	5 60	5 62	1 03	6 65	5 54	8 03	
H. G. Blood, Bone and Potash	259	Guarant'd Analysis.	......	......	......	......	7 00	10 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	5 55	2 68	2 46	5 14	7 06	11 19	
Gem Orange Tree	260	Guarant'd Analysis.	8 00	5 00	3 00	......	4 00	6 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	6 00	4 34	3 00	7 34	5 01	6 33	
Gem Vegetable Manure	261	Guarant'd Analysis.	8 00	5 00	3 00	......	4 00	6 00	E. O. Painter Fertilizer Co., Jacksonville.
		Official Analysis....	5 60	4 77	1 76	6 53	5 06	6 83	

ANALYSIS OF FERTILIZERS—Continued.

Armour's Celery Grower	262	Guarant'd Analysis.	......	5 00	1 00	......	8 00	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	5 70	4 71	2 34	7 05	8 40	8 11	
Armour's Lettuce Special.................	263	Guarant'd Analysis.	10 00	3 00	2 00	......	7 00	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 95	5 72	0 99	6 71	6 78	5 45	
Armour's Strawberry Fruiter...............	264	Guarant'd Analysis.	10 00	5 00	2 00	......	2 00	10 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	9 65	6 49	2 40	8 89	2 50	10 90	
Armour's Orange Tree Manure.............	265	Guarant'd Analysis.	10 00	8 00	2 00	......	3 50	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	8 05	7 46	3 13	10 59	3 80	4 83	
Armour's Fruit and Vine	266	Guarant'd Analysis.	10 00	6 00	1 00	......	2 50	11 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	8 80	5 96	1 75	7 71	2 72	10 08	
Armour's Golden Fruiter	267	Guarant'd Analysis.	10 00	6 00	1 00	......	3 50	6 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 75	7 43	2 27	9 70	3 52	7 04	
Armour's Canada Ashes	268	Guarant'd Analysis.	15 00	......	......	......	......	5 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	......	......	......	......	......	3 19	
Swift Sure Fertilizer....	269	Guarant'd Analysis.	10 00	7 00	3 00	......	2 50	10 00	M. L. Shoemaker. Philadelphia, Pa.
		Official Analysis....	8 30	8 90	3 54	12 44	2 57	10 10	
Baugh's H. G. Vegetable	273	Guarant'd Analysis.	......	6 00	2 00	......	5 00	7 00	Baugh & Sons, Philadelphia, Pa.
		Official Analysis....	13 45	7 37	1 35	9 02	4 55	7 08	
Armour's Cotton Boll..	274	Guarant'd Analysis.	10 00	8 00	1 00	......	2 00	2 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	10 85	8 11	2 53	10 64	1 95	2 99	

ANALYSIS OF FERTILIZERS—Continued.

Standard Ammoniated Super-Phosphate	275	Guarant'd Analysis.	......	8 00	......	.....	2 00	2 00	Virginia Car. Chem. Co., Charleston, S. C.
		Official Analysis....	13 00	9 38	4 03	13 41	2 05	1 71	
Bone Compound	276	Guarant'd Analysis.	16 00	8 75	1 00	.....	2 00	1 50	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 65	8 94	6 10	15 04	1 63	1 60	
Four per cent. Potash, Acid Phosphate.......	277	Guarant'd Analysis.	......	8 00	1 00	.....	......	4 00	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	14 05	12 84	1 91	14 75	...	2 41	
Acid Phosphate.........	278	Guarant'd Analysis.	......	12 00	3 00	..		.....	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	12 05	15 37	2 09	17 46	.....	......	
Cotton Seed Meal.......	279	Guarant'd Analysis.	......	......	......	2 50	8 00	1 50	Southern Cotton Oil Company.
		Official Analysis....	...	....	......	2 06	8 24	1 70	
Dark Cotton Seed Meal.	280	Guarant'd Analysis.	....	......	....	......	5 00	...	Florida Cotton Oil Co., Jacksonville, Fla.
		Official Analysis....	.....	....	......	......	4 28	....	
Cotton Seed Meal.......	281	Guarant'd Analysis.	7 65	......	.....	2 40	8 00	1 76	Lathrop C. C. Co., Hawkinsville, Ga.
		Official Analysis....			.....	.....	8 26	......	
Cotton Seed Meal.......	282	Guarant'd Analysis.	6 50	......	......	2 00	8 00	1 00	H. H. Smith, Atlanta, Ga.
		Official Analysis....		.. ..	.	......	8 16	......	
Tobacco Dust....	283	Guarant'd Analysis.	......	......	......	....	1 50	2 00	Eastern Tobacco Co., Richmond, Va.
		Official Analysis....	.....		......	.....	1 22	3 73	
Kentucky Brand H. G. Tobacco Dust.........	284	Guarant'd Analysis.	10 00	.....	......	......	3 50	5 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	....	......	......	....	2 79	9 19	

ANALYSIS OF FERTILIZERS—Continued.

Castor Pomace.	285	Guarant'd Analysis. Official Analysis....	10 00	....	....	1 50	6 00 5 88	1 00	Armour's Fert. Works, Jacksonville.
Nitrate of Soda.........	286	Guarant'd Analysis. Official Analysis....	2 00	....	....	....	17 00 17 26	....	J. R. Tysen, Jacksonville.
H. W. Ashes............	287	Guarant'd Analysis. Official Analysis....	....	....	....	....	....	2 50 3 30	J. R. Tysen, Jacksonville
H. G. Muriate of Potash	288	Guarant'd Analysis. Official Analysis....	....	....	....	....	....	50 00 47 28	Armour's Fert. Works, Jacksonville
H. G. Sulphate of Potash	289	Guarant'd Analysis. Official Analysis....	5 00	....	....	....	....	49 00 50 20	E. O. Painter Fertilizer Co., Jacksonville.
Low Grade Sulphate of Potash................	290	Guarant'd Analysis. Official Analysis....	5 00	....	....	....	....	26 00 26 50	E. O. Painter Fertilizer Co., Jacksonville.
Acid Phosphate.........	291	Guarant'd Analysis. Official Analysis....	....	14 00 17 00	...... 1 76	... 18 76	....	....	Little Brothers. Jacksonville.
H. G. Blood and Bone.	292	Guarant'd Analysis. Official Analysis....	8 00	..... 3 36	..... 2 39	7 00 5 75	10 00 10 10	....	E. O. Painter Fertilizer Co., Jacksonville.
Blood and Bone.........	293	Guarant'd Analysis. Official Analysis....	9 00	6 00 6 62	8 00 7 26	..... 13 88	6 50 7 23	....	Cudaby Packing Co., S Omaha, Neb.
Mapes Fruit and Vine Manure..............	294	Guarant'd Analysis. Official Analysis....	10 00 9 65	5 00 5 91	2 00 2 90	...... 8 81	2 00 2 36	10 00 10 79	Mape's Formula & P. G. Co., New York.

ANALYSIS OF FERTILIZERS—Continued.

Mapes Pineapple Mannre	295	Guarant'd Analysis.	10 00	4 00	2 00	......	5 00	1 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	14 45	2 87	3 68	6 50	4 99	6 25	
Mapes Orange Tree Manure	296	Guarant'd Analysis.	12 00	6 00	2 00	.....	4 00	3 00	Mape's Formula & P. G. Co., New York
		Official Analysis....	13 00	5 36	5 79	11 15	4 05	3 37	
Mapes Vegetable Manure	297	Guarant'd Analysis.	12 00	6 00	2 00	......	5 00	4 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	15 40	5 61	4 38	10 09	5 03	5 11	
Armour's Fruit and Vine	298	Guarant'd Analysis.	10 00	6 00	1 00	.....	2 50	11 00	Armour's Fert. works, Jacksonville.
		Official Analysis....	9 85	8 38	1 94	10 32	2 71	9 36	
Armour's Practical Pineapple	299	Guarant'd Analysis.	10 00	7 00	3 00	......	3 50	10 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	7 05	10 62	1 38	12 00	4 02	9 91	
Armour's Practical Trucker..............	300	Guarant'd Analysis.	10 00	6 00	2 00	......	3 00	10 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	8 15	6 50	4 50	11 00	3 57	8 72	
Armour's Orange Tree	301	Guarant'd Analysis.	10 00	8 00	2 00	.....	3 50	4 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 25	6 99	5 89	12 88	3 84	4 49	
Armour's Vegetable.....	302	Guarant'd Analysis.	10 00	7 00	2 00	......	4 00	6 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	10 85	9 03	2 77	11 80	4 46	6 66	
Armour's Fruit and Root Crop Special..........	303	Guarant'd Analysis.	10 00	8 00	1 00	..	2 00	5 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	10 10	8 42	1 76	10 18	2 17	7 29	
Peruvian Guano........	304	Guarant'd Analysis.	....	......	......	20 00	3 50	4 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	4 90	13 08	10 32	23 40	3 85	4 54	

ANALYSIS OF FERTILIZERS—Continued.

Florida Special Pineapple Fertilizer	305	Guarant'd Analysis.	6 00	4 00	4 00	.....	4 00	7 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	4 60	4 74	5 20	9 94	4 01	5 80	
Ideal Fruit and Vine....	306	Guarant'd Analysis.	10 00	6 00	.....	.....	3 00	10 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	8 00	7 56	0 94	8 50	3 22	10 67	
Peruvian Fruit and Vine Manure..............	307	Guarant'd Analysis.	10 00	6 00	7 00	.....	3 00	10 00	Willson & Toomer Fert Co , Jacksonville
		Official Analysis....	10 63	6 84	2 44	9 28	5 10	12 35	
Special Formula forCorn	308	Guarant'd Analysis.	10 00	8 00	1 00	.....	2 50	3 50	Willson & Toomer Fert. Co , Jacksonville
		Official Analysis....	11 90	7 81	1 27	9 08	2 25	5 25	
Ideal Fertilizer.........	309	Guarant'd Analysis.	8 00	5 00	1 00	......	4 00	6 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	9 50	6 31	1 30	7 61	4 00	6 99	
Special Mixture No. 1...	310	Guarant'd Analysis.	8 00	6 00	1 00	......	5 00	5 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	7 90	6 26	1 61	7 87	5 06	5 70	

BUREAU OF FERTILIZERS, MISCELLANEOUS EXAMINATIONS, 1903.

No. 115—Kaolin.

No. 115—Kaolin and Iron Oxide.

No. 117—Yellow Clay—Kaolin and Iron Oxide.
From W. N. Robertson, Bristol, Fla.

No. 188—Fuller's Earth—Silicate of Alumina—From O. H. West, Madison, Fla.

No. 119, Silicate of Lime and Alumina— From Beuj. F. Blackburn, Tampa, Fla.

No. 120, Muck Soil.
Volatile Matter ....64 per cent.
Ash ....36 per cent.
100
In Ash, Potash K_2O.0.26 per cent.
Phosphoric Acid.1.36
Lime 31.00
Insoluble, Sand, &c.67.38
100.00

Ammonia in Soil .. ..1.55 per cent.
J. E. Kilgore, Largo, Fla.

No. 121—Marl.

No. 122—Orange Grove Soil.—J. E. Kilgore, Largo, Fla.

No. 123, Copper Ore, Metalic Copper....7.50 per cent.
Cromwell Gibbons, Jacksonville, Fla.

No. 124, Water Examined for Oil, Carbonate of Iron and Orgonic Matter.
Geo. Amolelier, Green Cove Springs.

No. 125, Iron Pyrites—Sulphide of Iron—From D. A. Simmons, Westville, Fla.

No. 126—Water.
Total Solids per 100,000 points; 3,000 parts or 3 per cent—composed of—
Chloride of Sodium (Common Salt.)
Sulphate of Magnesia (Epsom Salt)
Sulphate of Lime (Gypsum.)
With trace of Iron and Carbonic Acid—From R. R. Talnall, Punta Gorda, Fla.

No. 127—Water.

Total Solids per 100,000 parts, 1147 parts; Composed of Chloride of Sodum (Common Salt).

Sulphate of Magnesia—(Epsom Salts).

Sulphate of Calcium—(Gypsum).

And Carbonate of Lime—From J. G. Bast, Titusville, Fla.

No. 128—Phosphate Rock.

25.85 per cent Phosphoric Acid—Equal to 54.06. Bone Phosphate of Lime.

No. 129—Phosphate Rock.

28.72 per cent. Phosphoric Acid, Equal to 64.90 per cent. of Bone Phosphate of Lime.—I. M. McCall, Jasper, Fla.

No. 130—Powder—

Composed of Sand and Sulphur—Russel & Landsing, West Palm Beach.

No. 131—Organic Vegetable Matter—Peat and Sand.—R. T. Butler, Tallahassee.

No. 132—Marl.

No. 133—Marl.

Sandy Marls, Composed of Carbonate of Lime, Sand, and Clay—Shell Fragments, no Phosphates—W. J. Berry, Pensacola, Fla.

No. 134—Muck Ashes.

Phosphoric Acid	1.36 per cent.
Potash	0.26 per cent.
Lime	31.00 per cent.
Undetermined, Sand, etc....	67.38 per cent.
(See No. 120)	100.00

J. E. Kilgrove, Largo, Fla.

No. 135—Well Water—

Total Solids per 100,000 parts, 43.2 parts Composed of Magnesium Sulphate—Chloride of Sodum (Common Salt) with trace of Iron and Lime—Henry Maige, Carrabelle, Fla.

No. 136 —Artesian Water—

Total Solids per 100,000 parts—14.0 parts Composed of Carbonate of Lime, Sulphate of Magnesia and Chloride of Sodium—a very pure water.—Gabriel Smith, Mayor of Sneads, Fla.

No. 137—Cassiva Pulp.
Moisture .... 13.90 per cent
Protein...... .... none
Starch, and Soluble Carbo
hydrates ....40.50 per cent.
Ash .... 1.60 per cent.
Crude Fiber ....44.00 per cent.
E. W. Amsden, Ormond, Fla.

No. 138—Artisean Water—
Total Solid per 10,000 parts, 15 parts composed of carbonate of lime, calcum sulphate—with traces of iron—A very pure water—A. D. Carmichael, Chipley, Fla.

No. 139—Pebble Phosphate—washed—
Phosphoric Acid.... ....36.90 per cent.
Equal to Bone Phosphate of
Lime... ....79.90 per cent.

No. 140—Pebble Phosphate Crude—
Phosphoric Acid.. ....30.19 per cent.
Equal to Bone Phosphate of
Lime.... ....65.94 per cent.
R. H. Seymore, Kississimmee, Fla.

No. 141—Conglomerate nodes, of Silica, Alumina and Iron.

No. 42—Loamy Soil—Sand and Peat.—R. F. Singletary, Westville, Fla.

No. 143—Sulphate of Iron, Iron Pyrites—R. C. Garvin, Westville, Fla.

No. 144—Artesian Water—
Total Solias per 100,000 parts—1.54 parts 1.05 per cent—Composed of Chloride of Sodium (common salt) Carbonate of Lime, Sulphate of Magnesia—(Epsom Salt)—H. L. Pidcock, Neptune, Fla.

No. 145—Well Water—
Total Solids per 100,000 parts—15.4 parts—Composed of Organic Matter, 12 parts; Calcium Sulphate, 3 parts, with Salt and Iron—H. L. Pidcock, Neptune, Fla.

No. 147—Artesian Water—120-foot well.
Total Solids per 100,000 parts—35 parts Composed of Carbonate of Lime, Sulphate of Magnesia with traces of Chloride of Sodium.

No. 148—Artesian Water, from 80-foot well.
Total Solids per 100,000 parts—24.0 parts Composed of Carbinate of Lime and Chloride of Sodium. No Organic Contaminations.—C. McCall, Brooksville, Fla.

No. 149—Water—
Total Solids per 100,000 parts—13.5 parts Composed of Carbonate of Lime, Sulphate of Lime, with traces of Sodium Chloride. A very pure water.—Geo. Spooner, Sneads, Fla.

No. 150.—Condensed Smoke (Vapors from Charcoal Kiln.)
The liquid has 10 per cent. of Carbonaceous Matter, 2 per cent. of which is tar, with traces of wood alcohol and other products of distillation.—G. W. Pridgen, Port Tampa City.

No. 151—Fuller's Earth—
Hydrated Silicate of Alumina.—J. N. Hooker, Bartow, Fla.

No. 152—Oxide of Alumina—Bauxite—M. C. Rerdelle, Tampa, Fla.

No. 153—Oxide of Alumina—Bauxite—P. Bewan, Orlando, Fla.

No. 154—Carbonate of Lime.

No. 155—Clay, Silicate of Alumina.—T. I. Lancasten, Ocala, Fla.

No. 156—Iron Oxide, and Alumnia, Red Clay.—B. C. Clay, Alva, Fla.

No. 157—Impure Kaolin.—F. A. Holtzenhauser, Florahome, Fla.

No. 158—"Shorts"—A fair sample of shorts from wheat.—Chas. A. Willis—Braidentown, Fla.

No. 159—Petrified Wood.—Carbonates of Lime and Magnesia.—Dr. Crill, Palatka, Fla.

No. 160—Clay, Aluminum Oxide, with iron Oxide.—J. E. King, Lecanto, Fla.

No. 161—Water—
Total Solids per 100,000 parts—29 parts composed of Carbonate of Lime and Sulphate of Lime.—N. Walker, Crawfordville, Fla.

No. 162—Earth from Rookery—
Sand and shell with traces of phosphate.—P. D. Howe, Bay View, Fla.

No. 163—Carbonate of Lime—S. A. Tackler, Crystal River, Fla.

No. 164—Oxide of Iron and Clay—
Impure Red Ochre.—J. N. Hooker, Bartow, Fla.

No. 165—Crude Kaolin—
Sand, 35 per cent.
Kaolin, 60 per cent.
J. N. Hooker, Bartow, Fla.

No. 166—Carbonate of Lime, with traces of Phosphate.
E. O. Kelly, Carrabelle, Fla.

No. 167—Water and Soil (Mud)—
Examined for oil. None found.—Morgan, Tallahassee, Fla.

No. 168—Velvet Bean Meal (fine ground.)—

Moisture	10.55 per cent.
Protein	18.34 per cent.
Fat	5.85 per cent.
Starch	32.70 per cent
Ash	3.53 per cent.
Fiber	29.30 per cent.

Frank Adams, Jasper, Fla.

No. 169—Velvet Bean Meal (coarse ground.)

Moisture	10.10 per cent.
Protein	20.98 per cent.
Fat	4.56 per cent.
Starch	34.15 per cent.
Ash	3.50 per cent.
Fiber (undetermined Matter)	26.41 per cent.

Frank Adams, Jasper, Fla.

No. 170—Galina (Sulphide of Lead.)
W. A. Tysen, Welborne, Fla.

No. 171—Spring Water—
Total Solids per 100,000 parts, 79. parts composed of Sodium Chloride....31.00 per cent.
Carbonate of Lime ....26.70 per cent.
Sulphate of Magnesia .... 2.90 per cent
Undetermined, Sand, Clay, Organic Matter, etc .. ..18.49 per cent.
Thos. Palmer, Tampa, Fla.

No. 172—Clay, Silicate of Alumnia—J. B. Smith, Tampa, Fla.

No. 173—Clay, Silicate of Alumnia, impure Kaolin.—Hugh C. Allen, Maitland, Fla.

No. 174—Carbinate of Lime, with trace of phosphate. Brown Sheppard, Bristol, Fla.

No. 175—Impure Carbonate of Lime, trace of phosphate.—W. J. Oven, Franklyn Co.

No. 176—Water—

Total Solids per 100,000 parts, 65.6 parts. Composed of Bismouth with trace of Magnesium Sulphate, Carbonote of Lime, and Chloride of Sodium. Evidently contaminated by unclean vessel. Loss on ignition 29.2 parts.—Dr. S. E. Crill, Palatka, Fla.

No. 178—Fuller's Earth.—D. M. Wood, Bond, Fla.

No. 179—Shell Marl, Coraline Lime Stone.—George Holmes, Ft. George, Fla.

No. 180—Water—

Total Solids per 100,000 parts, 26.0 parts. Composed of Carbonate of Lime, Sulphate of Magnesium with trace of Sodium Chloride and Alumina.—H. W. Ford, Gainesville, Fla.

No. 181—Water—

Total Solids per 100,000 parts, 17. parts composed of Carbonate of Lime, Sulphate of Magnesia Ferous Oxide and Chloride of Sodium. Organic Matter 9. parts impure water.—A. L. Pennock, Neptune, Fla.

No. 182—Iron Ore—

Magnetic Oxide of Iron.

Metalic Iron ....64.05 per cent.

Mr. Cay, Tallahassee, Fla.

No. 184—Carbonate of Lime—Marl.

J. H. Kelly, Carrabelle, Fla.

No. 185—Soil—(Sea Mud.)

Phosphate trace.

Potash trace.

W. C. Clopton, Pensacola, Fla.

No. 186—Clay, Silicate of Alumina, and oxide of iron, precepitated from ice.

E. J. Varn, Madison, Fla.

No. 187—Soil (Sea Mud.)

Phosphate trace.

Ammonia, none.

Potash—0.22 per cent.
J. C. Pettersen, Pensacola, Fla.

No. 188—Carbonate of Lime—F. A. Fackler, Crystal River, Fla.

No. 189—Conglomerate Rock—
Carbonate of Lime, Silicate of Lime and Alumina, trace of phosphate—A mixture of Soft Phosphate, Kaolin and Sand—C. A. Lock, Dade City, Fla.

No. 190—Mineral Deposit—
Carbonate of Lime and Magnesia, with Oxide of Iron and Organic Matter.—W. J. Krome, St. Augustine.

No. 191—Oxide of Iron, Bog Ore—
Impure Hematite.
J. M. Hooker, Bartow, Fa.

No. 192—Fuller's Earth—Hydrated Silicate of Alumnia.—J. E. Ricketson, Blountstown, Fla.

No. 193—Iron Oxide, Bog Ore.—J. N. Hooker, Bartow, Fla.

No. 194—Brick Clay, Brown Feruginous Clay—Silicate of Alumnia and Iron Oxide.—W. T. French, Jacksonville, Fla.

No. 195—Marly Clay, Calcarious Silicate of Alumina, with trace of phosphate.—Marvell M. Whitehead, Ozona, Fla.

No. 196—Crystalized Lime Stone—Iceland Spar.—Auguste Wagner, Lelroy, Fla.

No. 197—Water—
Total Solids per 100,000 parts, 2 parts—Composed of Chlorid of Sodium and Sulphate of Calcium—an exceptionally pure water.—W. R. Johnson, Pensacola, Fla.

No. 198—Water—
Total Solids per 100,000 parts, 104 parts—Composed of Chloride of Sodium, Sulphate of Magnesium, and Carbonate of Lime, with trace of iron.
G. H. Count, Enterprise, Fla.

No. 199—Artesian Well Water—
Total Solids per 100,000 parts, 18.2 parts—Composed of Carbonate of Lime and Magnesia, Oxide of Iron, with trace of Chloride of Sodium.—J. C. Anderson, Caryville, Fla.

No. 200—Water—Sample No. 1.—
Total Solids per 100,000 parts, 45.0 parts—Composed of Carbonate of Lime, Chloride of Sodium and Sulphate of Magnesia.—James T. Tucker, Tampa, Fla.

No. 201—Water—Sample No. 2.—
Total Solids per 100,000 parts, 261. parts—Composed of Carbonate of Lime, Sulphate of Magnesia, and Chloride of Sodium—James T. Tucker, Tampa, Fla.

No. 202—No. 1 Yellow Oxide of Iron, Yellow Cchre
No. 2. Brown Hematite.
No. 3. Impure Fuller's Earth.
J. E. Rickerston, Blountstown, Fla.

No. 203—Iron Pyrates Sulphide of Iron.—W. R. Johnson, Edgar, Fla.

No. 204—Kaolin—Park Trammell, Lakeland, Fla.

No. 205 Steatite, (Soap Stone.)
Hydrated Silicate of Alumnia and Magnesia.
O. H. Kelley, Carrabelle, Fla.

No. 206—Luminated Marl.
Phosphoric Acid............. 0.75 per cent.

No. 207—Green Shell Marl—
Phosphoric Acid.............. 0.80 per cent.
J. H. Parker, Bear-Head, Fla.

No. 208—Tallahassee City Water—
Total Solids per 100,000 parts, 18. parts—Composed of Carbonate of Lime and Magnesia with traces of Sulphate of Lime and Magnesia and Chloride of Sodium. No Organic impurities.

No. 209——Water—
Total Mineral Solids, per 100,000 parts, 2.6 parts—Composed of Ferous Oxide.
Organic Matter, 9 parts, per 100,000 parts. No Carbonate or Sulphates. A Surface Water contaminated by surface drainage. Unfit for drinking.—S. S. Alderman, Wewahitchka.

No. 210—Impure Kaolin, Kaolin with Oxide of Iron.
H. M. MacPherson, Orange, Fla.

No. 211—Mangrove Bark, examined for Tannin—
Tannins.. .. ..26.83 per cent.
Non-Tonnins ....20.57 per cent.

Soluble Solids ....47.40 per cent.
G. W. Reynolds, Key West, Fla.

No. 212—Water—
Total Solids per 100,000 parts, 177 parts—Composed of Carbonate of Lime, Sulphate of Alumnia and Magnesia and Chloride of Sodium.—C. F. Wall, Sea Side, Fla.

No. 213—Vat Liquor—
Soluble Solids ....0.62 per cent.
Tannins ....0.04 per cent.
Non-Tannins ....0.58 per cent
Telfair Stockton, Jacksonville, Fla.

No. 214—Quartz—
Silicate of Lime, with Iron Oxide and trace of Phosphate.

No. 216—Marly Lime Stone—
Phosphoric Acid ....1.35 per cent.
O. P. Hughy, Braidentown, Fla.

No. 217—Impure Kaolin—F. B. Bell, Wewahitchka.
No. 218—Impure Kaolin, Kaolin and Iron Oxide.
No. 219—Kaolin.
L. N. Pipkin, Mulberry, Fla.

No. 220—Soil—
Insoluble Silica ....97.45 per cent.
Soluble Matter 2.55

100.00

Carbonate of Lime 0.75
Carbonate of Magnesia .0.40
Oxide Megnesia 0.20
Iron Oxide 0.60
Phos. Acid 0.11
Nitrogen 0.05

W. P. Neeld, River View, Fla.

No. 221—Caustic Soda—
78 per cent. pure.
John Hoalder, Braidentown, Fla.

No. 222—Graphite—

No. 223—Water for Oil—
Water with small quantity of refined kerosene.—Kelley and Shaw, Tallahassee, Fla.

No. 224 Impure Kaolin—colored by iron.—F. A. Lumpkin, Flora Home, Fla.

No. 225—Salty Soil—
Examined for Potash—contains Chloride of Sodium, with 0.44 per cent. Potash.—S. M. Teague, Ocalo, Fla.

No. 226—Water—
Total Solids per 100,000 parts, 4.5 parts—Consisting of Calcium Sulphate, with traces of Magnesium Sulphate, Chloride of Sodium, and Oxide of Iron.
Mrs. Arrowsmith, Tallahassee, Fla.

No. 227—Water—
Total Solids per 100,000 parts 5.5 parts composed of Calcum Sulphate, Chloride of Sodium and Oxide of Iron.—Mrs. M. L. Berry, Apopka, Fla.

No. 227—Granite—Feld Spar, Quartz, Horn Blend.—R. N. Cook, Miami, Fla.

No. 228—Coraline Lime Stone—J. E. Ingraham, St. Augustine, Fla.

No. 229—Well Water—
Total Solids per 100,000 parts, 6.50 parts—Composed of Zinc Sulphate, Ferous Oxide with traces of Chloride of Sodium, Calcium Carbonate and Magnesium Sulphate. An impure and dangerously contaminated water. Joseph Summerlin, Bartow, Fla.

No. 230—Water—
Total Solids per 100,000 parts, 26. parts—Composed of Carbonate of Lime Chloride of Sodium and Oxide of Iron, traces of Magnesium Sulphate.—A. L. Nelson, Dunedin, Fla.

No. 231—Alkaline Earth—
Carbonate of Lime, and Caustic Soda.—C. P. Lund, Sea Breeze, Fla.

No. 232—Stock Feed—

Protein	10.50 per cent.
Fats	4.31 per cent.
Starch	31.95 per cent.
Fiber	53.25 per cent.

W. A. Bour's & Co., Jacksonville, Fla.

No. 234—Kaolin—

No. 235—Kaolin—

L. N. Pike, Mulberry, Fla.

No. 236—Conglemerate—

Clay, Sand, Mica.—C. V. Goolsby, Punta Gorda.

No. M. 237—Water—

Total Solids	0.74 per cent.
Chloride of Sodium	0.59 per cent.
Calcum Carbonate and Magnesium Sulphate	.15 per cent.

State Board of Health, Jacksonville, Fla.

No. 238—Magnesian Lime Stone.

No. 239—Siliceous Lime Stone.

Harvey Duval, River Junction, Fla.

No. 240—Lime Stone, Coraline.—J. E. Ingraham, St. Augustine Fla.

No. 241—Water—

Total Solids per 100,000 parts—18 parts composed of Carbonate of Lime, with traces of Sulphate of Lime and Chloride of Sodium.—East Coast Electric Light and Power Co., West Palm Beach.

No. 241—Conglomerate—

Sicicate of Lime, Silicate of Alumina, Iron Oxide.—Henry Pearson, Ft. Meade, Fla.

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NUMBER 2

FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

APRIL 1, 1904.

B. E. McLIN
COMMISSIONER OF AGRICULTURE.
TALLAHASSEE, FLORIDA.

Part 1—Crops. Part 2—Weather Report,
Part 3—Fertilizers.

Entered January 31, 1903, at Tallahassee, Florida as second-class matter, under Act of Congress, of June, 1900.

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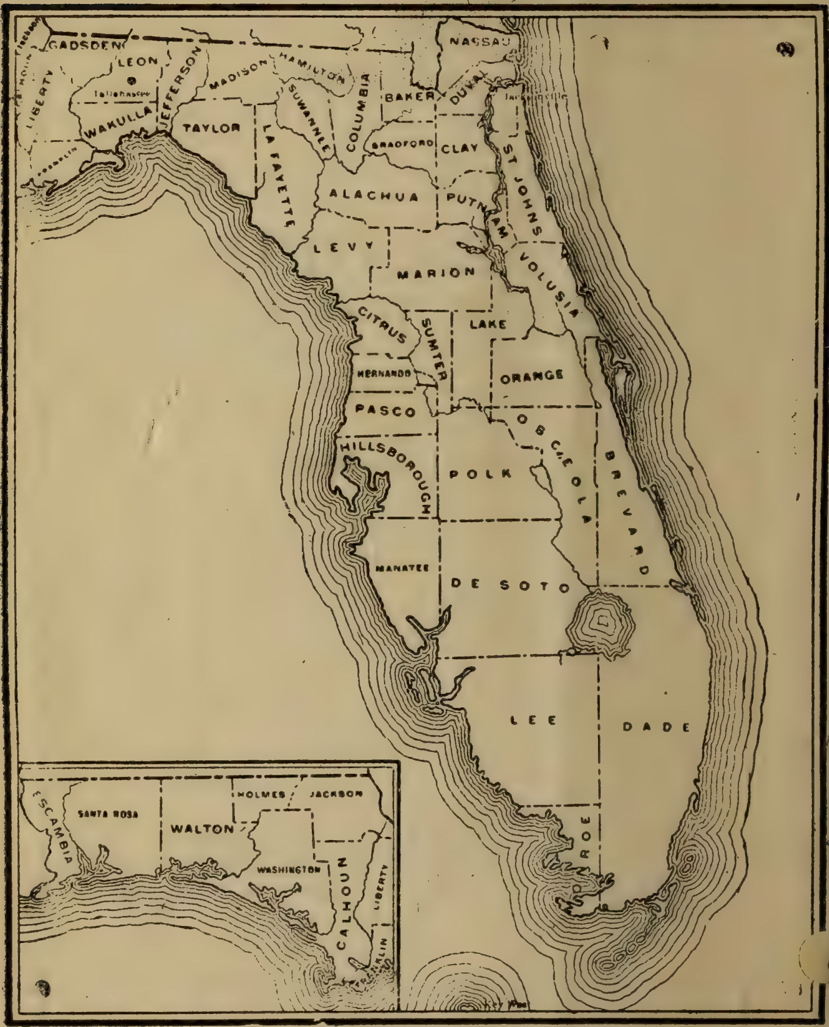
TALLAHASSEE, FLA.,
I. B. HILSON, STATE PRINTER.

County Map of the State of Florida.

(For the Bulletin.)



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PART I.

CROPS.

DEPARTMENT OF AGRICULTURE.

Hon. B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

Alachua County.—A small number of crops have not yet been planted, but there is a general increase in acreage of nearly all crops. All are in from fine to fair condition, and vegetable crops turning out well. Orange trees looking fine, and peaches doing well.

Baker County.—Acreages of crops will average about the same as last year, not many vegetables are planted for market; some are doing well, and some are not doing much; Irish potatoes are very good.

Bradford County.—There is an increase in cotton and some other acreages over last year also in the vegetable crop acreage; conditions are generally good; strawberry crops fine and of unusual good quality; peaches in fine condition.

Brevard County.—The spring has been very forward and favorable; no damage to fruits or trees, crops are fine, and the vegetable crops are yielding well. Fruit trees in excellent condition.

Calhoun County.—There is a considerable increase in acreage of field crops this year. Gardens are doing well, and fruit promises a good crop this year.

Citrus County.—Sugar cane was damaged some last fall by early frosts which accounts for the small acreage; in other crops there is a general increase in acreage, and all are in good condition. The vegetable crops are as a rule doing very well though the weather has been rather too dry. Fruit trees doing well.

Clay County.—There is a very general increase in the acreage of all farm crops; vegetable crops are all doing well in spite of dry weather.

Dade County.—There is a very general increase in the acreage of all farm crops; vegetable crops are all doing well in spite of dry weather

Dade County.—The weather has been very dry up to the last of the month; there has been a large increase in acreage of all crops, and they are generally doing fine; the fruit prospect for the coming crop are exceedingly good.

DeSoto County.—There is no material difference in acreage as compared with a year ago. The nights are rather cool, and the weather is getting dry and windy. All kinds of crops are in fine condition and many vegetables are being marketed. Fruit trees are in fine shape, and good crops anticipated.

Escambia County.—There is a largely increased acreage being planted in cotton and a general increase in other field crops; vegetable and other crops looking well; no damage from frosts. Fruit promises to be an extra good crop.

Franklin County.—Crops are better and earlier this season than for a long time, and if we have seasonable rains and temperature, crops of all kinds will be good.

Gadsden County.—There is a general and considerably increased acreage in all field crops throughout this county; vegetables are only raised for local market; all crops are in good condition; peaches promise well.

Hamilton County.—Crops are slow in being planted; there will be an increased acreage in some crops over last year, but the majority will be about the same as usual; seasons are favorable.

Holmes Couny.—The weather is fine and favorable for crops. The acreages generally will be about the same as planted last year, but conditions are much more favorable at this time. Crops that are growing are doing well.

Jeffer:on County.—A number of crops in this county are planted on a larger scale than for years, and the acreage of several of them are largely increased, crops are doing well; fruit trees are in good condition and peaches and pears indicate a good crop.

Lake County.—Field crops are doing well, and about the usual acreage is planted in these crops. There is a large acreage planted in vegetables and the crops are doing fine. Fruit crops of melons oranges, etc., are in fine condition.

Lee *County.*—We have had a remarkably fine winter, only two light frosts not enough to hurt even a tomato. The acreage of crops is larger than last year and all are in fine condition, and the vegetables are being marketed fast. Fruit trees extra fine, and good crops are assured.

Leon County.—There is a considerably increased acreage in the cotton and other field crops; crops are well advanced, and the favorable seasons are benefitting them. Vegetable and small fruit crops are very fine.

Levy County.—The acreage of Sea Island cotton will be increased and plantings of other field crops will be

I am a candidate to succeed myself to the office of Commissioner of Agriculture, subject to the Democratic primary to be held in 1904. This is my first term, to which I was elected by the Democratic voters of the State. My undivided time has been given to the work of the office. The experience gained should strengthen my qualification. I promise as efficient service in the future as I have endeavored to render in the past. I can promise no more; will give no less. If my official work meets your approval, I will appreciate your vote and influence at the coming primary.

Yours very truly,

Tallahassee, Fla. B. E. McLin.

vegetable crops are good; the orange trees are doing peaches good.

Osceola County.—The weather has been very dry, and the melon, potato, and tomato crops are being injured. Generally the acreage will be about as last year, though there is an increase in several crops. Vegetable crops, with exception noted above are in fair condition. Fruit trees are looking fine and barring bad seasons, will give large crops of fruit.

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LEON COUNTY.—There is a considerably increased acreage in the cotton and other field crops; crops are well advanced, and the favorable seasons are benefitting them. Vegetable and small fruit crops are very fine.

LEVY COUNTY.—The acreage of Sea Island cotton will be increased, and plantings of other field crops will be fully up to the usual acreage. The weather is too dry but vegetables are being marketed and if we have rain shortly all crops will be fine.

MADISON COUNTY.—The acreage of crops in this county will be when all are planted about the same as usual, except a moderate increase in cotton acreage. Planting has progressed well and the seasons are generally favorable.

MANATEE COUNTY.—Rain is badly needed, the weather is very warm. Acreage of crops of all kinds is larger than last year and conditions are very good, although rain is wanted; vegetable crops look well, and are being marketed. Fruit trees doing fine and a large crop expected this fall.

MARION COUNTY.—It is very dry and rain is needed to produce the best results, and if we do not get it soon damage will be done. Field crop acreages will be about as last year, there is considerable increase in vegetable acreage and at present they are doing well; fruit in good shape.

NASSAU COUNTY.—Not many field crops planted in our county, but the acreage will be about as last year; the vegetable crops are good; the orange trees are doing well, peaches good.

OSCEOLA COUNTY.—The weather has been very dry, and the melon, potato, and tomato crops are being injured. Generally the acreage will be about as last year, though there is an increase in several crops. Vegetable crops, with exception noted above are in fair condition. Fruit trees are looking fine and barring bad seasons, will give large crops of fruit.

Polk County.—Crop acreages are about the same as usual; there is an increase in vegetable crop acreage, and so far the prospect was never better in this county at this season for a full crop in vegetables, and crops generally. The white fly is again making its appearance in some sections of the county; but the trees are looking fine.

Santa Rosa County.—About the usual acreage is being planted to field crops except in cotton which is being considerably increased. Other crops are doing well, and fruit crops appear to be better than last year.

Suwannee County.—Our farmers are in good spirits and some crops are up and growing well. The acreage will be about as last year, may be an increase in cotton when all planting is completed, vegetable crops are good. Velvet beans are being largely planted as feed for hogs and cattle.

Wakulla County.—There is considerable increase in acreage of several crops being planted; the vegetable crops are doing well, and conditions are favorable so far, for good crops.

REPORT OF CROP ACREAGES AND CONDITION, CORRECTED FOR MARCH, 1904.

COUNTIES	Upland Cotton	S. I. Cotton	Corn	Oats	Sugar Cane	Broom Corn	Tobacco	Rye	Rice	Sweet	Field Peas	Cassava
	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage	Acreage
Alachua...	....	100	100	125	75	....	....	100	...	...	....	....
Baker......	....	100	100	75	75	....	....	....	50	100	90	....
Bradford..	....	110	90	110	50	....	....	....	....	100	...	....
Brevard...	....	....	....	....	100	....	....	100	....	....	100	100
Calhoun....	100	100	100	100	50	....	....	....	100	100	110	100
Citrus.....	....	....	100	90	85	....	..	100	....	110	100	....
Clay.......	....	105	100	105	90	....	....	...	....	100	100	....
Columbia..	....	100	100	105	90	...	..	100	....	100	100	....
Dade......	....	....	....	....	....	....	....	....	....	100	100	....
DeSoto....	...	...	105	100	100	100	90	100	100	100	100	100
Escambia..	200	....	100	100	150	100	100	100	100	150	100	100
Franklin...	....	....	90	90	90	....	....	....	...	90	90	....
Gadsden...	110	100	110	120	100	....	110	100	100	...	....	....
Hamilton..	...	110	100	105	105	....	....	....	....	100	80	....
Hillsboro..	....	....	100	....	110	....	....	....	....	100	100	....
Holmes....	100	....	100	75	100	...	100	...	90	100	120	....
Jackson....	125	....	115	110	125	....	....	100	....	100	100	....
Jefferson..	150	75	100	115	200	....	....	....	...	100	110	.. .
Lake......	....	....	100	100	100	..	....	....	....	100	100	50
Lee........	....	....	100	100	120	....	100	100	110	120	100	100
Leon.......	125	....	115	110	105	...	150	100	100	110	100	100
Levy......	100	105	100	100	90	....	....	100	100	100	100	105
Madison...	100	75	100	100	100	....	....	80	50	100	. .	....
Manatee ..	...	. ..	110	120	150	....	....	...	150	100	120	100
Marion....	100	90	90	100	100	100	100	90	100	100	110	110
Nassau....	....	....	100		90	....	....	....	....	100	100	....
Orange....	....	....	100	150	110	....	....	....	....	100	...	110
Osceola...	....	....	100	100	100	....	....	..	100	110	100	100
Pasco......	....	....	110	150	100	....	....	100	100	100	100	...
Polk......	....	....	100	90	100	....	....	100	....	....	....	100
Santa Rosa	115	....	110	105	110	....	....	....	100	115	120	....
Sumter....	....	.	110	100	100	..	....	95	..	...	....	...
Suwannee.	....	100	100	70	60	40	....	100	80	70	....	100
Wakulla...	125	....	90	90	110	...	....	90	60	100	100	...
Walton....	110	....	100	100	110	....	....	100	....	100	100	....
Washingtoı	110	....	100	110	100	...	...	100	....	100	90	...
Gen'l av'ge per cent..	119	98	101	104	101	85	107	98	94	104	101	98

CONDITION OF CROPS—Continued.

COUNTIES	Velvet Beans	Wheat	Cabb'ge		Irish Potatoes		Tomatoes		Cucumbers		Eng'ish Peas	
	Acreage	Acreage	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition
Alachua....	100	....	200	100	100	100	100	100	100	75	....	....
Baker... ..	75	.	...	....	80	100	....	....	...	....	....	....
Bradford ..	....	....	....	....	200	90	...	....	....	....	...	....
Brevard ..	..	....	....	...	100	120	100	100	100	100	....	..:
Calhoun...	125	....	....	....	....	....	....	....		....	....	....
Citrus.. ..	105	....	100	85	110	90	100	100	100	100	105	100
Clay......	110	...	....	....	100	100	100	100	100	100	100	100
Columbia..	110	.. .	85	100	100	100	....	...	100	100	100	100
Dade	100	....	100	100	100	100	100	95	100	100	....	....
DeSoto.....	110	....	110	100	105	100	110	100	100	100	100	100
Escambia..	100	...	100	100	150	100	150	100	100	100	100	100
Franklin...	90	....	75	90	75	90	75	80	75	85	75	90
Gadsden...	100	...	100	100	100	100	100	100	100	75	100	85
Hamilton..	100	...		...	....	....	....	....	....	...	....	....
Hillsboro..	125	...	125	100	100	100	110	100	110	100	90	100
Holmes....	100	....	95	100	110	100	100	100	100	100	50	100
Jackson ..	150	....	100	100	100	90	100	80	.	....	90	80
Jefferson ..	110	100	.. .	....	..	...	..	...	..	...	....	....
Lake.......	110	....	100	100	75	75	75	80	....	....	100	90
Lee........	100	....	100	100	120	120	100	120	100	100	90	100
Leon.	115	....	100	105	110	1 0	100	100	100	100	100	110
Levy.......	110	....	100	100	80	90	60	100	110	90	100	90
Madison...	...	...	80	80	75	75	60	60	100	100	85	85
Manatee...	120	....	1 0	100	120	100	120	100	100	100	100	100
Marion....	100	100	90	90	100	100	100	100	90	100	90	100
Nassau....	...	...	100	100	75	100	100	75	...	..	....	....
Orange....	115	. ..	120	100	100	100	115	100	100	100	120	100
Osceola....	120	....	100	125	100	100	120	90	100	90	100	80
Pasco	120	....	100	100	100	100	60	100	85	90	100	100
Polk.......	125	....	150	110	150	100	125	100	120	100	50	100
Santa Rosa	90	....	110	100	125	100	125	100	100	100	105	100
Sumter.....	....	....	100	100	100	100	100	90	100	95	90	90
Suwannee.	100	....	100	100	100	100	....	...	100	90	....	....
Wakulla .	50	...	...	.	100	100	....	...	....	....	....	....
Walton . ..	125	....	75	90	...	...	....	..	....	....	100	100
Washin't'n.	120	...	100	100	100	100	....	....	..	...	....	....
Gen'l av'ge per cent .	107	100	104	99	105	98	100	95	100	96	93	96

CONDITION OF CROPS—Continued.

COUNTIES	Beans		Lettuce		Egg Plants		Celery		Pea-nuts		Beets	
	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition	Acreage	Condition
Alachua	50	100	100	50	100	80	....	....	....	....	....	....
Baker	....	....	....	....	....	....	....	....	100	100	....	....
Bradford	....	....	....	....	....	....	....	....	....	....	....	....
Brevard	100	100	100	100	....	....	100	100	....	....	100	100
Calhoun	....	....	....	....	....	....	....	....	100	....	....	....
Citrus	110	100	90	35	....	....	....	....	100	100	100	100
Clay	100	100	....	....	....	..	....	....	110	100	....	...
Columbia	....	....	100	100	....	....	....	....	100	100	100	100
Dade	100	100	100	100	100	100	....	....	....	....	....	...
DeSoto	110	100	100	100	100	100	110	100	105	100	100	100
Escambia	150	100	100	100	100	100	100	100	150	100	100	100
Franklin	80	90	90	90	....	....	75	75	100	75	75	90
Gadsden	100	100	100	100	100	75	100	85	100	100	100	100
Hamilton	100	100	....	.		....	....		100	90	....	....
Hillsboro	....	....	110	100	100	90	95	100	...	..	120	100
Holmes	100	100	90	85	100	90	....	....	110	100	100	100
Jackson	100	100	....	....	....	....	....	....	125	100	....	...
Jefferson	....	...	....	....	....	...	....	....	100	100	....	....
Lake	100	100	100	100	....	....	....	....	....	....	....	....
Lee	110	110	110	110	110	120	100	100	100	100	100	110
Leon	100	110	100	110	100	100	100	110	110	100	100	110
Levy	90	80	....	....	....	....	....	....	100	100	....	....
Madison	70	70	50	50	....	....	....	....	100	100	....	....
Manatee	120	100	120	100	100	100	120	100	....	....	100	100
Marion	110	90	110	80	100	100	110	100	100	100	100	100
Nassau	100	100	....	....	....	....	....	....	...	....	....	....
Orange	110	100	125	100	110	110	125	120	...	....	110	100
Osceola	120	100	100	100	80	75	110	100	100	100	100	100
Pasco	60	100	100	150	100	100	100	100	....	....	100	100
Polk	90	100	100	100	80	75	70	100	....	....	120	100
Santa Rosa	100	100	....	....	....	....	....	....	100	100	....	....
Sumter	90	90	90	100	100	90	90	90	....	....	100	100
Suwannee	100	100	....	....	....	....	...	...	....	....	....	....
Wakulla	90	100	....	....	....	....	....	....	80	90	....	....
Walton	....	..	...	....	....	....	....	...	....	....	....	....
Washin't'n	100	100	....	....	—	....	....	....	100	90	....	..
Gen'l av'ge per cent	99	98	99	95	99	94	100	98	104	93	101	100

CONDITION OF CROPS—Continued.

COUNTIES	Water-melons		Canta-loupes		Straw-berries		Orage Trees	Lemon Trees
	Acreage	Condition	Acreage	Condition	Acreage	Condition	Condition	Condition
Alachua	....	....	100	100	100	125	150	..
Baker	50	100	50	100	....	......	....	......
Bradford	....	....	...	......	100	120	...	.....
Brevard	....	....	...	.....	......	.....	100	100
Calhoun	115	100	110	100	......	.....	100	......
Citrus	100	90	...	......	......	......	75	......
Clay	100	100	....	....	......	....	......	......
Columbia	100	80	100	75	80	80	...	......
Dade	....	....	....	.....	100	100	105	95
DeSoto	110	100	100	100	90	100	95	90
Escambia	150	100	150	100	.....	......	....	......
Franklin	80	90	80	85	80	90	...	......
Gadsden	100	90	100	90	100	100	.....	......
Hamilton	100	90	100	90	10	80	...	....
Hillsborough	100	100	100	100	75	100	90	75
Holmes	120	90	100	85	100	110	....	......
Jackson	150	90	...	..	......	.....	....	......
Jefferson	100	100	100	100	.....	.....	.....	.....
Lake	100	100	..	....	50	100	100	100
Lee	120	120	120	120	150	125	150	125
Leon	110	100	110	100	115	100	......	......
Levy	100	100	75	80	......	.....	.....	......
Madison	100	100	50	50	100	100	.....	......
Manatee	110	80	100	80	150	100	100	100
Marion	150	100	150	100	125	110	110	100
Nassau	100	100	....	....	......	.....	......	..
Orange	150	100	115	100	110	110	100	.....
Osceola	110	95	110	95	75	80	100	100
Pasco	100	100	100	90	100	85	150	......
Polk	100	100	75	100	100	90	100	100
Santa Rosa	100	100	..	...	......	......	..	....
Sumter	100	100	90	95	90	90	100	60
Suwannee	100	100	....	......	......	.. ..	...	....
Wakulla	80	90	....	....	......	......	......	......
Walton	..	....	....	....	....	.....	....	......
Washington	100	85	....		......	.....		......
General Average per cent	106	96	99	92	100	100	108	95

CONDITION OF CROPS---Continued.

COUNTIES.	Lime Trees Condition	Grape Fruit Tres Condition	Bananas Condition	Pine Apples Condition	Guavas Condition	Peaches Condition	Pears Condition
Alachua	......	......	......	......	......	125	......
Baker	......	......	......	......	......	......	......
Bradford	......	......	......	......	......	115	......
Brevard	100	120	100	100	100	100	......
Calhoun	......	100	......	......	......	......	......
Citrus	......	75	......	......	......	100	90
Clay	......	......	......	......	......	110	110
Columbia	......	......	......	......	......	......	......
Dade	100	105	100	100	100	......	......
De Soto	95	100	90	100	90	100	100
Escambia	......	......	......	......	......	100	......
Franklin	......		......	......	......	90	......
Gadsden	......	......	......	......	......	150	......
Hamilton	......	......	......	......	......	......	......
Hillsborough	75	90	......	85	......	......	......
Holmes	......	......	......	......	......	100	......
Jackson	......	......	......	......	......	150	......
Jefferson	......	......	......	......	......	125	100
Lake	......	100	......	......	25	100	50
Lee	125	150	110	110	120	100	100
Leon	......	......	......	......	......	100	25
Levy	......	......	......	......	......	120	
	......	......	......	......	......	......	......
	100	100	80	100	80	100	......
	100	110	......	100	......	110	......
Nass	......	......	......	......	......	100	......
Ora	......	90	......	120	120	125	100
Osc	100	100	80	110	130	120	130
Pa	......	100	......	......	......	100	100
P	100	100	100	......	......	100	100
Ros	......	......	......	......	......	100	50
S.	......	100	......	90	90	100	100
Suwannee	......	......	......	......	......	......	......
Wakulla	......	......	......	......	......	......	......
Walton	......	......	......	......	......	100	100
Washington	......	......	......	......	......	75	70
General Average Per Cent	99	103	9[illegible]	101	95	108	88

PART II.

WEATHER REPORT

U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

Central Office: Washington, D. C.

FLORIDA SECTION:

A. J. MITCHELL, Section Director.,

JACKSONVILLE, FLA.

REPORT FOR FEBRUARY, 1904.

SALIENT CLIMATIC FEATURES.

ATMOSPHERIC PRESSURE.

	Inches.
Mean, as determined from records of 4 stations	30.15
Departure from the normal, 4 records	+0.06
Highest observed, at Pensacola on the 4th	30.47
Lowest observed, at Jacksonville on the 22d	29.97
Absolute range for the State	0.50

TEMPERATURE.

	Degrees
Mean, as determined from records of 59 stations	60.8
Departure from the normal, 27 records	+1.4
Highest monthly mean, at Key West	71.0
Lowest monthly mean, at Fernandina	54.9
Highest recorded, at Inverness on the 19th and Orlando on the 29th	89
Lowest recorded, at Middleburg on the 2d	23
Absolute range for the State	66

PRECIPITATION.

	Inches.
Average, as determined from records of 57 stations	3.03
Departure from the normal, 26 records	−0.45

Greatest amount for any 24 hours, at Federal Point on the 21st	.12
Greatest monthly amount, at Fort Meade	6.91
Least monthly amount, at Flamingo	T.
Average number of days on which 0.01 or more fell	5

WIND.

Prevailing wind direction	Northeast.

WEATHER.

Average number of clear days	17
Average number of partly cloudy days	6
Average number of cloudy days	6

MISCELLANEOUS PHENOMENA.

(Dates of.)

Frost, Killing (or 32 degrees or below): Archer, 2, 3, 13; Federal Point, 2; Fernandina, 2; Fort George, 2; Gainesville, 2; Huntington, 2; Jacksonville, 2, 5; Jasper, 2, 12, 13; Johnstown, 2, 5, 12, 13; Lake City, 2, 12, 13; Macclenny, 2, 3, 5, 12, 13; Micanopy, 3; Middleburg, 2, 3, 4, 5, 13, 14, 17, 18; Pinemount, 2, 3, 5, 12, 23; St. Augustine, 2; Sumner, 2, 3, 5, 13; Switzerland, 2, 5, 13; Bartow, 2; Brooksville, 13; DeLand, 2; Eustis, 2; Fort Meade, 2; Inverness, 2, 3; New Smyrna, 2; Ocala, 2; Orange Home, 2; St. Leo, 2; Tampa, 2; Tarpon Springs, 2; Bonifay, 2, 5, 12, 13, 23; Carrabelle, 2, 12; DeFuniak Springs, 1, 2, 12, 13, 23; Madison, 2, 12; Marianna, 12, 13, 14, 16, 23; Molino, 1, 2, 5, 12, 13, 23; Pensacola, 1, 12; St. Andrew, 2, 13, 23, 24; Stephensville, 1, 2, 3, 5, 13, 14; Tallahassee, 12; Wewahitchka, 1.

Frosts, Heavy: Jacksonville, 13; Lake City, 3, 4; Pensacola, 23; Wewahitchka, 11, 12, 22.

Frosts, Light: Federal Point, 3, 5, 13, 14; Fernandina, 3, 4, 5; Bainesville, 3, 4, 5, 13, 14; Huntington, 5; Jacksonville, 3, 4, 14; Jasper, 4, 5, 23; Lake City, 14, 17, 23; Middleburg ,15, 16; Pinemount 4; Switzerland, 3, 4, 14; Clermont, 2; Eustis, 13; Grasmere, 2; Inverness, 12; Malabar, 2; Ocala, 3, 13; St. Leo, 3, 24; Manatee, 2; Apalachicola, 12, 13, 14; Molino, 22; Pensacola, 13; Wewahitchka, 13.

COMPARATIVE TEMPERATURE AND RAINFALL DATA FOR FEBRUARY, WITH DEPARTURES FROM NORMAL, DURING THE PAST THIRTEEN YEARS.

Year	1892	1893	1804	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Mean	61.9	-64.9	62.6	52.1	56.0	63.0	57.5	58.0	58.5	55.8	54.4	62.7	60.8
Depar	+2.5	+5.5	+3.2	—7.3	—0.4	+3.6	—1.9	—0.5	—0.9	—3.6	—5.0	pl3.3	pl1.4
Total	1.40	3.92	2.03	3.19	3.06	6.57	2.04	5.69	4.42	4.44	4.88	5.67	3.03
Depar	—2.08	+0.44	—1.45	—0.29	—0.42	+3.09	—1.44	+2.21	+0.94	+0.06	pl1.40	pl2.19	—0.45

PRESSURE AND WIND TABLE.

STATIONS	Atmospheric Pressure					Wind Velocity in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville..	30.17	30.45	4	29.97	22	6,679	36	nw	1	100	38	80
Jupiter	30.15	30.34	4	39.00	22	7,922	34	nw	1	97	54	81
Key West.....	30.12	30.29	4	29.99	†11	7,106	33	nw	1	....	..	
Pensacola.....	*30.17	30.47	4	30.01	21	6,764	36	nw	1	99	42	82
Tampa........	30.16	30.41	4	30.00	22	4,147	33	w	1	100	42	81

*8 a. m. reading only. †Also 20th.

CLIMATOLOGICAL DATA FOR FEBRUARY, 1904.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Farh. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Sky. Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.
Northern Section.																			
Archer	Alachua	92	22	58.6	—0.1	83	29	27	2	40	4.22	+0.45	1.87	...	6	15	10	4	nw.
Federal Point	Putnam	10	12	58.7	+1.6	82	7*	30	2	38	6.00	+2.37	3.12	...	8	16	9	4	ne.
Fernandina	Nassau	15	3	54.9	.....	80	7	31	2	30	6.33	......	2.40	...	14	16	0	13	ne.
Fort George†	Duval	15	19	56.4	—0.4	82	7	32	2	...	......	......	....	...	...	...	...	...	nw.
Gainesville	Alachua	175	48	61.6	+4.7	83	8*	31	2	34	2.83	—0.64	1.02	...	6	15	0	14	ne.
Huntington	Putnam	50	8	58.8	+0.9	84	8	28	2	34	3.44	—0.61	2.10	...	4	17	8	4	e
Jacksonville	Duval	43	34	56.6	—1.8	80	7	33	12	28	2.70	—0.55	1.77	...	9	14	10	5	ne.
Jasper	Hamilton	165	6	55.6	+2.1	82	29	27	2	37	2.35	—2.31	1.60	..	3	18	4	7	sw.
Johnstown	Bradford	125	9	*a*56.4	—0.4	*a*82	7*	*a*28	2	*a*40	2.34	—4.11	0.94	...	4	..	...	...	......
Lake City	Columbia	201	14	57.9	+1.8	83	29	28	2	40	2.26	—2.38	0.88	...	5	10	12	7	ne-sw
Macclenny	Baker	140	9	57.4	+1.8	84	29	27	2	44	2.51	—2.79	0.91	...	4	18	3	8	w.
Micanopy	Alachua	105	8	*c*60.1	+1.2	*c*85	6*	*c*29	3	*c*39	4.00	+0.80	2.00	...	3	...	..	...	......
Middleburg	Clay	20	5	55.6	.....	82	27*	23	2	47	3.44	......	.....	...	8	14	7	8	ne-se
Pinemount	Suwannee	103	2	55.8	.....	82	27*	26	2*	40	3.37	.....	1.60	...	6	17	6	6	se.
St Augustine	St. Johns	10	54	57.2	—0.5	85	7	26	2	37	4.86	+1.05	1.84	...	7	10	3	16	n
Sumner	Levy	23	14	57.7	+1.2	82	28	24	2	45	3.73	+0.82	2.46	...	4	15	9	5	sw.
Switzerland	St. Johns	...	8	*b*57.0	+4.2	*b*82	7	*b*28	2	*b*41	3.96	—0.15	2.00	.	5	..		..–	.....

CLIMATOLOGICAL DATA FOR FEBRUARY, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	
Central Section.																			
Bartow	Polk	17	9	64.8	+3.9	85	29	31	2	35	4.99	+1.09	2.01	...	5	16	9	4	sw.
Brooksville	Hernando	328	12	62.6	+1.4	85	28*	34	13	37	1.50	—2.55	0.60	...	5	22	0	7	sw.
Clermont	Lake	110	12	64.8	+1.0	85	29	36	2	33	2.97	—1.12	1.45	...	4	15	9	5	s.
De Land	Volusia	32	4	60.4		82	7*	29	2	...	......	......		...	.	21	3	5	......
Eustis	Lake	180	14	64.0	+3.3	87	29	33	2	34	2.35	—1.23	1.05	.	6	14	9	6	ne-e.
Fort Mead	Polk	125	21	64.5	+2.8	87	8*	30	2	40	6.91	+4.54	2.02	...	5	24	0	5	e.
Fort Pierce	Brevard	2[illegible]	13	65.6	+1.8	84	22	40	3	35	1.81	—2.16	0.60	...	6	20	4	5	se.
Grasmere	Orange	75	8	...	.....	..	..	33	2	...	......	.....	.....	...	.	23	4	2	ne.
Inverness	Citrus	43	4	61.3	....	89	19	28	2	42	1.43	......	1.05	...	2	17	8	4	sw.
Kissimmee	Osceola	65	12	63.0	+2.4	82	29	37	2	30	5.16	+1.05	2.12	...	5	20	5	4	se
Malabar	Brevard		3	63.8	.....	85	9	37	2	32	3.77	......	1.21	...	4	23	4	2	ne.
Merritt's Island	Brevard	20	23	64.2	0.0	80	8*	41	1	22	4.02	+1.33	1.24	...	5	21	5	3	ne.
New Smyrna	Volusia	20	16	*a*60.2	+0.8	*a* 4	8	*a*31	2	*a*35	4.15	+1.22	2.30	...	4	23	2	4	......
Ocala	Marion	150	17	61.4	+2.2	87	7	28	2	41	2.03	—1.27	0.94	...	4	17	5	7	ne.
Orange City	Volusia	50	14	62.4	+2.2	89	29	27	2	43	2.51	—0.45	1.05	...	3	23	3	3	se.
Orange Home	Sumter	75	...	61.8	.....	85	7	30	2	37	3.72	.....	2.11	...	4	17	7	5	.....

CLIMATOLOGICAL DATA FOR FEBRUARY, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hour.	Total snowfall (un melted).	Number rainy days.	Number clear days.	Number partly cloudy days	Number cloudy days	
Orlando	Orange	98	17	04 1	+3.2	89	29	33	2	30	2 45	+0.54	1.25	...	3	24	2	3	ne.
Plant City	Hillsbor'gh	121	12	....	.....	.	...	.	..	...	.....	.....		...	...	...	...	...	......
Rockwell	Marion	.	5	60 2	.	83	29	35	13	42	1.87	......	0 95	...	5	6	19	4	nw.
St. Leo	Pasco	140	10	62.5	+2.2	84	29	30	2	38	1.96	—2 32	0.84	...	8	16	6	7	w.
Tampa	Hillsbor'gh	20	14	63.5	—2.4	83	28	37	2	28	3.20	+0 66	1.66	...	8	17	6	6	ne.
Tarpon Springs	Hillsbor'gh	20	20	62 0	+0.4	84	28	32	2	36	2.06	—1.46	....	...	3	20	3	6	s.
Titusville	Brevard	11	13	.....	...	...	.	.	...	...	.....	....	1 43	...	...	...	...	...	......
Southern Section.																			
Avon Park	De Soto	150	8	65.4	+2 9	87	8	35	2	34	2.73	—1.70	0.88	...	4	21	5	3	ne.
Flamimgo	Monroe	11	4	70 0	...	88	17*	51	25	32	T	.....	T	...	0	25	0	4	se.
Hypoluxo	Dade	.	8	68.7	+2 3	85	22	45	2	30	3.66	—0.97	2.00	...	3	18	8	3	e.
Jupiter	Dade	28	17	68 5	+1.4	83	22	44	2	24	2.10	—0 50	0.91	...	6	11	16	2	se.
Key West	Monroe	22	34	71.0	—0 4	82	22	52	2	16	1.08	—0.60	....	...	4	17	9	3	ne.
Manatee	Manatee	16	21	64.0	+2.5	84	28*	37	2	33	2.41	+0.83	1.26	...	6	23	3	3	nw.
Marco	Lee	...	4	68.2	.....	85	28	43	1*	32	0.22	.....	0.20	...	2	26	3	0	ne.
Miami	Dade	...	8	70.8	+4 2	85	11*	44	2	31	1.65	—1.16	1.50	...	2	11	18	0	se.
Myers	Lee	19	21	65.2	—0.7	83	28	38	2	28	2.00	—1.49	1.13	...	3	22	6	1	s.
Nocatee	De Soto	43	5	66.5	.....	88	8	39	2	35	1.03	......	0.45	...	4	18	4	7	ne.

CLIMATOLOGICAL DATA FOR JANUARY, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Western Section																			
Apalachicola	Franklin	...	...	57.0	.....	74	29	36	12	24	1.84	......	0.80	...	5	14	0	15	e.
Bonifay	Holmes	116	3	56.9	.....	80	27	28	2	39	4.10	......	2.00	...	4	13	3	13	s.
Carrabelle	Franklin	12	9	57.1	+3.5	77	29	30	12	32	2.84	—3.20	.....	...	4	18	0	11	e.
DeFuniak Sp'gs	Walton	193	8	56.0	+3.8	80	27	24	2	40	2 95	—5.42	1.30	...	6	10	9	10	s.
Madison	Madison	...	...	57.2	.....	83	29	29	2	40	3.83	......	2.00	...	5	20	0	9	n.
Marianna	Jackson	85	5	f 57.4	....	f 84	27	f 29	13	f 39	¶4.20	......	....	...	...	...	..	..	.....
Molino	Escambia	49	1	57.2	.....	83	27	27	1	39	4 20	......	1.85	...	5	10	6	13	s.
Monticello	Jefferson	207	...	a58 2	.....	a83	27	a30	12	a35	3.10	......	1.63	..	4	...	...	...	w.
Pensacola	Escambia	56	25	56.0	+0.1	72	29	33	12	22	2.20	—1.86	0.68	...	12	6	11	12	ne.
Quincy	Gadsden	260	4	.....	.....	81	7	..	...	...	......	......	...	...	...	...	...	...	....
St. Andrew	Washington	12	7	55.9	+3 7	76	29	29	2*	36	2 83	—1.79	0.90	...	7	19	5	5	s.
Stephensville	Taylor	...	5	56.4	.....	81	28	25	2	48	4.02	.. ..	2.85	...	4	13	12	4	sw.
Tallahassee	Leon	193	19	56.5	+1 9	77	29	31	12	28	2.75	—2.98	0.76	...	7	13	9	7	n.
Wausau	Washington	250	7	.....	.....	..	...	29	12*	.	3.50	—3.01	1.20	...	5	8	9	12	s.
Wewahitchka	Calhoun	...	5	56.8	.....	84	6	30	1	35	3.17	......	1.10		8	9	6	14	s.
	State Means	...	...	60.8	+1.4	...	...	...	...	...	3.03	—0.45		...	5	17	6	6	ne.

CLIMATOLOGICAL DATA FOR JANUARY, 1904.—Continued.

‡STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Late Report Jan., 1904.																			
Micanopy	....	..	...	51.9	....	83	26	28	14	41	3.76	....	3.00	..	3	...	...	...	..

All records are used in determining State means, but the mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation.

a. b, c, etc., following name of station indicate number of days missing from report.

†Thermometers are not self-registering, and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily.

*More than one day. ‡Weather Bureau.

PART III.

FERTILIZERS.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

STATE VALUATIONS, 1904.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1904.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen)	15 cents a pound
Potash (as actual potash, K2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $1.25 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid	6.22 per cent.x$1.00—	6.22
Insoluble Phosphoric Acid	1.50 per cent.x .20—	.30
Ammonia	3.42 per cent.x 3.00—	10.26
Potash	7.23 per cent.x 1.10—	7.95
Mixing and bagging		1.25
Commercial value at sea ports		25.98

Or a fertilizer analyzing as follows:

Available phosphoric acid	8 per cent.x$1.00—$	8.00
Ammonia	2 per cent.x 3.00—	6.00
Potash	2 per cent.x 1-10—	2.20
Mixing and bagging		1.25
Commercial value at sea ports		$17.45

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of ten per cent. can be made in above valuations, *i, e.*:

Available Phosphoric Acid - -	90 cents per unit
Potash (K2O) - - - -	99 cents per unit
Ammonia (or equivelent in nitrogen)	$2 70 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

MARKET PRICES OF CHEMICALS AND FERTILIZING MATERIALS AT SEA PORTS, JAN. 4, 1904.

Ammoniates.	Less than 5 tons	5 to 10 tons.	10 tons & over.
Nitrate of Soda 17 per cent. Ammonia	$50.00	$49.00	$49.00
Sulphate of Ammonia 25 per cent Ammonia	71.00	70.50	70.00
Dried Blood 16 per cent. Ammonia	54.00	53.50	53.00
POTASH.			
High Grade Sulphate Potash 48 per cent. Potash (K2O)	52.00	51.00	50.00
Low Grade Sulphate Potash 26 per cent. Potash (K2O)	32.00	31.00	30.00
Muriate of Potash 50 per cent. Potash (K2O)	46.00	45.00	44.00
Nitrate Potash, 13 Am., 42 Potash (K2O)	82.00	81.00	80.00
Kainit 12 per cent. Potash	14.00	13.50	13.00
Canada Hardwood Ashes 4 per cent. (K2O) Potash	17.00	16.50	16.00
AMMONIA AND PHOSPHORIC ACID.			
High Grade Blood and Bone, 10 10 per cent. Ammonia 7 per cent. Phosphoric Acid	35.00	34.50	34.00
Low Grade Blood and Bone, 6½ per cent. Ammonia, 8 per cent. Phosphoric Acid	27.00	26.50	26.00
Owl Brand Tankage, 5½ per cent. Ammonia	20.00	19.50	19.00

Raw Bone 4 per cent. Ammonia 22 per cent. Phosphoric Acid..	29.00	28.50	28.00
Ground Castor Pomace 6 per cent. Ammonia, 2 per cent. Phosphoric Acid	22.00	21.50	21.00
Bright Coton Seed Meal 8 per cent. Ammonia market quotations	26.00	25.50	25.00
Dark Coton Seed Meal, 5 per cent Ammonia, market quotations	18.00	17.50	17.00

PHOSPHORIC.

Double Super Phos., 45 per cent. Available Phosphoric Acid ...	45.00	44.50	44.00
High Grade Acid Phosphate, 16 per cent. Available Phosphoric Acid	16.00	16.50	15.00
Acid Phosphate 14 per cent. Available Phosphoric Acid....	14.00	15.50	13.00
Boneblack 17 per cent. Available Phosphoric Acid	25.00	24.50	24.00

MISCELLANEOUSL

H. G. Ground Tobacco Stems, 3 per cent. Ammonia, 9 per cent Potash	25.00	24.50	25.00
Pulverized Ground Tobacco Stems	16.00	15.00	15.00
Tobacco Dust, No. 1, 3 per cent. Ammonia, 2 K20 Potash......	21.00	20.50	20.00
Tobacco Dust, No. 2, 1½ per cent. Ammonia, 1½ per cent. Potash.	16.00	15.50	15.00
Dark Tobacco Stems, baled.....	16.00	15.50	15.00
Land plaster in sacks	10.50	10.25	10.00

Any formula will be mixed at the price of $1.25 per ton, in addition to the cost of the materials used.

FACTORS FOR CONVERSION.

To convert—

Ammonia into Nitrogen, multiply by	0.824
Nitrogen into ammonia, multiply by	1.214
Nitrate of soda into nitrogen, multiply by	16.47
Nitrogen, into protean by	6.25
Bone phosphate into phosphoric acid, multiply by	0.458
Phosphoric Acid into Bone Phosphate, multiply by	2.184
Muriate of Potash into actual potash, multiply by	0.632
Actual potash into muriate of potash, multiply by	1.583
Sulphate of potash into actual potash, multiply by	0.541
Actual potash into sulphate of potash, multiply by	1.583

Fort instance you buy 95 per cent. of nitrate of soda and want to know hom much nitrogent in it, multiply 95 per cent. by 16.47 you will get 15.65 per cent nitrogen; you want to know how much ammonia this Nitrogen is equivalent to, then multiply 15.65 per cent. by 1.214 and you get 18.99 per cent., the equivalent in ammonia.

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19	....	....
Sulphate of Ammonia	21 to 24	....	....
Dried Blood	12 to 17	....	....
Concentrated Tankage	12 to 15	1 to 2	....
Bone Tankage	6 to 9	10 to 15	....
Dried Fish Scrap	8 to 11	6 to 8	....
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	13 to 17	1½ to 2	....

PHOSPHATE MATERIALS.

	Pounds per Hundred.		
	Ammonia	Avaiable Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphte	....	....	26 to 32
Florida Rock Pnosphate	....	....	33 to 35
Florida Super Phosphate	....	14 to 19	1 to 6
Grounded Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissoved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actua Potash	Am'nia	Phos-phoric Acid	Lime
Muriate of Potash	50	....	....	....
Sulphate of Potash	48 to 52	....	....	....
Double Sul. of Pot. & Mag.	26 to 30	....	....	....
Kainit	12 to 12½	....	....	....
Sylvinit	16 to 20	....	....	....
Cotton Seed Hu Ashes	15 to 30	....	to 9	10
Wood Ashes, uneached	2 to 8	....	to 2	30 to 25
Wood Ashes leached	1 to 2	....	to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4	.....	3½
Cow Manure (fresh)	0.40	0 to 41	0.16	0.31
Horse Manure (fresh)	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)	0.67	1.00	0.23	0.83
Hog Manure (fresh)	0.60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.28	0.70

SPECIAL NOTICE.

The attention of persons sending samples of fertilizers for analysis is called to the following:

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER SAMPLES TO THE COMMISSIONER OF AGRICULTURE.

—SECTION 15 OF LAW.

Special samples of fertilizer sent in by purchasers, under Sec. 9 of the law approved May 22, 1901. Shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed and a FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICTLTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN OR BOTTLE, WILL BE ACCEPTED FOR ANALYSIS This rule is adopted to secure fair samples of sufficient size to make the six necessary determinations, viz: Moisture, available and insoluble phosphoric acid, ammonia and potash; and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means, of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

COPIES OF THE FERTILIZER LAW.

Citizens interested in the fertilizer law of the State, and desiring to avail themselves of its protection, can obtain a copy free of charge by sending for sameto the Commissioner of Agriculture.

COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent. and above in ammonia, 2 per cent. or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its Commercial value is as follows:

8 per cent. ammonia @ $3.00	$24.00
2 per cent. available phosphate @ $1.00	2.00
1½ per cent. potash @ $1.10	1.65
	$27.65

The commercial value being in excess of the market value.

There is a quantity of cotton seed meal offered in the State labeled "For feeding purposes only." These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent. potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia	$13.50
1¾ per cent. phosphoric acid	1.75
1½ per cent. potash	1.65
Commercial value	$16.90

These goods are sold at $1.00 to $2.00 per ton less than prime meal Their relative value is $10.75 less than prime meal. There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of ammonia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis and pay for the actual content of the valuable elements only.

CHEMICAL EQUIVALENTS.

Under the law and the regulations of the department chemical equivalents of the three essential elements, Ammonia, Available Phosphoric Acid, and Potash, are not allowed in the guarantee. A few instances have been noted, particularly in cotton seed meals, when the Ammonia is guaranteed, and followed by a statement of the protean contents:

As.	Ammonia	5 per cent.
	Protean	25.75 per cent.
Or	Ammonia	8 per cent.
	Protean	41.18 per cent.

Such a guarantee is misleading, as the terms "Ammonia" and "Protean," are equivalent, and only represent the "Nitrogen" (or ammonia) content of the goods.

Multiplying the nitrogen by 1.21 gives the ammonia thus, 3 per cent. nitrogen X1.21 gives ammonia 3.63 per cent. or nitrogen 3 per cent. X6.25 gives "Protean" 18.75 per cent.

UNIFORM FERTILIZER LAWS.

The Florida fertilizer law, is based on the report of a joint committee of the "Association of American Agricultural Colleges," and the "Association of Official Agricultural Chemists," approved by the "United States Agricultural Department;" with few changes to meet local conditions. It was complied by a committee of the "Florida State Agricultural Society" with a view to protect the Florida farmer and the manufacturer of honest commercial fertilizer, from the vendor of adulterated and inferior goods.

That is has met the requirements, and has accomplished the desired results, to a certain extent is evidenced by the higher class of goods sold in the State; the large increase in revenue, and the fact that complaints of inferior or worthless goods are of far less frequent occurrence

FORMULAS FOR VEGETABLES.

As vegetable growing for the early markets is one of the most important industries of the State a few accepted formulas, have been selected from those recommended by various Experimental Stations, and from the experience of practical growers and manufacturers of standard commercial fertilizers. It is conceded that ammonia (or nitrogen) is required in relatively large quantities for succulent crops, such as, cabbage, celery, lettuce, cucumbers, string beans, and for young fruit trees, to induce growth.

That phosphoric acid, is reqiured for fiber production, and to mature the woody parts of plants.

That potash is demanded by starch and sugar producing plants, potatoes, beets, sugar cane, peaches, oranges, pineapples, etc., to mature their sugars and starches. The predominate element required for different classes of vegetables or plants, is other things being equal.

For foliage crops, cabbage, lettuce, spinage, etc., ammonia. For woody plants, and for fiber phosphoric acid. For fruits, sugar and starch productions, potash.

We give here special formulas for trucking crops prepared by State Chemist John M. McCandles, of Georgia, together with his remarks prefacing them.

SPECIAL FORMULAS FOR TRUCKING CROPS.

"Those who raise early vegetables for market, or what are known as trucking crops, require special formulas. The trucker must get his crop to market early, or he is likely to find no market for it. He therefore must force his crop in every practicable way. One of the chief methods of doing this is by the use of very rich or high grade fertilizers used in very large quantities per acre, one thousand and even as high as two thousand pounds per acre of the very highest grade fertilizer being often used. Large quantities of nitrogen are required, and part of this nitrogen must be in the form of the very soluble nitrate of soda, which dissolves in water as readily as sugar or salt. This valuable ingredinet of trucking crops should not be mixed with acid phosphate, especially if the latter is damp, if the mixture is intended to stand for any great length of time before use. There is a tendency for the acid phosphate to cause a decomposition of the nitrate of soda with a resulting loss of nitrogen. As to the amounts to be used per acre the trucker must use his own judgment and experience with his soil, remembering that economy in this direction has not been found to pay by those wishing an early market crop of vegetables. It is rarely the case that les than five hundred pounds per acre will pay. The formulas given below have been selected mainly from some of the trucking bulletins of the North Carolina Agricultural Experiment Stations."

For Celery—7 per cent. Ammonia, 5 per cent. Available Phosphoric Acid, 8 per cent. Potash.

	Ingredients		Yield
1.	300 lbs. Nitrate of Soda...... 800 " Fish scrap.......... 600 " Acid phos, 13 pr. ct. 300 " Muriate potash....... 2,000 lbs.	will yield	6.9 pr. ct. Ammonia. 5 5 " Avail. phos. acid. 8.0 " Potash.
2.	250 lbs. Nitrate soda........ 600 " Dried blood........ 850 " Acid phos., 13 pr. ct. 300 " Muriate potash....... 2,000 lbs.	will yield	7.2 pr. ct. Ammonia. 5.5 " Avail. phos. acid. 7 8 " Potash.

For Irish Potatoes—6 per cent. Ammonia, 7 per cent. Available Phosphoric Acid, 8 per cent. Potash.

	Ingredients		Yield
1.	300 lbs. Nitrate of soda..... 600 " Cottonseed meal..... 800 " Acid phos.......... 300 " Muriate potash...... 2,000 lbs.	will yield	5.4 pr. ct. Ammonia. 7.2 " Avail. phos. acid. 8.1 " Potash.
2.	300 lbs. Nitrate soda........ 600 " Fish scrap........... 800 " Acid phos., 14 pr. ct. 300 " Muriate potash...... 2,000 lbs.	will yield	5.8 pr. ct. Ammonia. 6.8 " Avail. phos. acid. 7.8 " Potash.
3.	200 lbs. Nitrate soda........ 900 " Fish scrap.......... 600 " Dissolved bone black 300 " Muriate potpsh...... 2,000 lbs.	will yield	6.4 pr. ct. Ammonia. 6.6 " Avail. phos. acid. 7 8 " Potash.
4.	220 lbs. Nitrate soda........ 500 " Dried blood.......... 970 " Acid phos. 14 pr ct.. 310 " Muriate potash...... 2,000 lbs.	will yield	6 1 pr. ct. Ammonia. 6.8 " Avail. phos. acid. 8.0 " Potash.
5.	300 lbs. Nitrate soda.......... 600 " Cottonseed meal..... 800 " Acid phos. 13 pr. ct.. 300 " Muriate potash....... 2,000 lbs.	will yield	5.4 pr. ct. Ammonia. 6.0 " Avail phos. acid. 8.3 " Potash.

6. 300 lbs. Nitrate soda........
600 " Tankage.............
800 " Acid phos. 13 pr. ct..
300 " Sulph. potash, H. G..
2,000 lbs.
will yield
5.5 pr. ct. Ammonia.
6.4 " Avail. phos. acid.
7.8 " Potash.

For Beets and Lettuce—6 per cent. Ammonia, 5 per cent Available Phosphoric Acid, 8 per cent. Potash.

1. 300 lbs. Nitrate soda........
800 " Cottonseed meal....
600 " Acid phos. 13 pr. ct..
300 " Muriate potash......
2,000 lbs.
will yield
6.2 pr. ct. Ammonia.
4.9 " Avail. phos. acid.
8.5 " Potash.

2. 200 lbs. Nitrate soda........
800 " Fish scrap...........
700 " Acid phos., 11 pr. ct.
300 " Muriate potash......
2,000 lbs.
will yield
5.9 pr ct. Ammonia.
5.4 " Avail. phos. acid.
7.8 " Potash.

For Cabbage, Cauliflower, Cucumbers and Melons—6 per cent. Ammonia, 5 per cent Available Phosphoric Acid, 7 per cent. Potash.

1. 300 lbs. Nitrate Soda........
750 " Cottonseed meal ....
700 " Acid phos. 11 pr. ct..
250 " Muriate potash .....
2,000 lbs.
will yield
6.0 pr. ct. Ammonia.
4.8 " Avail phos. acid.
7.1 " Potash.

For Spinach—5 per cent. Ammonia, 8 per cent. Available Phosphoric Acid, 6 per cent. Potash.

1. 200 lbs. Nitrate soda.........
650 " Fish scrap...........
950 " Acid phos., 14 pr. ct.
230 " Muriate potash......
2,000 lbs.
will yield
5.2 pr. ct. Ammonia.
7.7 " Avail. phos. acid.
6.0 " Potash.

2. 300 lbs. Nitrate of soda. .....
500 " Cottonseed meal.....
1,000 " Acid phos., 14 pr. ct.
200 " Muriate potash......
2,000 lbs.
will yield
5.0 pr. ct Ammonia.
7.6 " Avail phos. acid.
5.6 " Potash.

For Radishes and Turnips—5 per cent. Ammonia, 7 per cent. Available Phosphoric Acid, 8 per cent. Potash.

1. 250 lbs. Nitrate soda........
550 " Cottonseed meal.....
900 " Acid phos., 13 pr. ct.
300 " Muriate potash.....
2,000 lbs.
will yield
4.6 pr. ct. Ammonia.
6.5 " Avail Phos. acid.
8 3 " Potash.

For Asparagus*: 5 *per cent. Ammonia,* 7 *per cent. Available Phosphoric Acid,* 8 *per cent. Potash.

1. 200 lbs. Nitrate soda........
700 " Cottonseed meal.....
800 " Acid phos , 13 pr. ct.
300 " Muriate potash.
2,000 lbs.
will yield
4.9 pr. ct. Ammonia.
6.1 " Avail. phos. acid.
8.4 " Potash.

For Egg Plant and Tomatoes*: 5 *per cent. Ammonia,* 6 *per cent. Available Phosphoric Acid.* 7 *per cent. Potash.

1. 200 lbs. Nitrate Soda........
700 " Cottonseed meal.....
840 " Acid phos., 13 pr. ct.
260 " Muriate potash......
2,000 lbs.
will yield
4.9 pr. ct. Ammonia.
6.3 " Avail. phos. acid.
7.4 " Potash.

For Onions*: 5 *per cent. Ammonia,* 5 *per cent. Available Phosphoric Acid,* 8 *per cent. Potash.

1. 200 lbs. Nitrate soda........
750 " Cottonseed meal....
750 " Acid phos. 11 pr ct.
300 " Muriate potash.
2,000 lbs.
will yield
5.1 pr. ct. Ammonia.
5 1 " Avail. phos. acid.
8.5 " Potash.

For Sweet Potatoes*: 3 *per cent. Ammonia,* 7 *per cent. Available Phosphoric Acid,* 8 *per cent. Potash.

1. 100 lbs. Nitrate soda........
400 " Fish scrap..........
1,180 " Acid phos., 11 pr. ct
320 " Muriate potash.
2,000 lbs.
will yield
3.5 pr. ct. Ammonia.
7.8 " Avail. phos. acid.
8.3 " Potash.

2.	100 lbs.	Nitrate soda........	will yield	3.5 pr. ct. Ammonia.
	500 "	Cottonseed meal....		7.8 " Avail. phos. acid.
	1,100 "	Acid phos., 13 pr. ct.		8.3 " Potash.
	300 "	Muriate potash....		
	2,000 lbs.			

For Beans and Peas: 3 *per cent. Ammonia,* 7 *per cent. Available Phosphoric Acid,* 7 *per cent. Potash.*

1	100 lbs.	Nitrate soda........	will yield	2.9 pr. ct. Ammonia.
	450 "	Cottonseed meal....		7.1 " Avail phos. acid.
	1,200 "	Acid phos., 11 pr. ct.		6.9 " Potash.
	250 "	Muriate potash......		
	2,000 lbs.			

Note.—In the preceding formulas, H. G. Sulphate may be substituted for Muriate of Potash wherever it occurrs.

Muriate is ordinarily used by vegetable growers, though the sulphate is preferred by many. H. G. Sulphate, 48 per cent. potash is now quoted at $52.00 per ton on $1.08 per unit of potash. Muriate, 50 per cent.; potash is quoted at $46.00 per ton or .92 cents per unit.

R. E. ROSE, State Chemist. MARION G. DONK, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.
(Samples taken by purchaser).

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Aci			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Special Mixture	473	.....	7.35	2.26	9.61	4.60	9.03	T. Kimball, St. Petersburg, Fla.
Fertilizer	474	.....	8.62	0.46	9.08	1.64	13.32	F. S. Hickock, Hastings, Fla.
Bone Compound (No. 1)..	476	19.00	9.75	2.67	12.42	2.20	1.62	John M. Calhoun, Marianna, Fla.
Acid Phosphate (No. 2)..	477	22.45	12.61	2.51	22.45	.....	.....	John M. Calhoun, Marianna, Fla.
Special Mixture	478	.....	6.08	0.76	6.84	4.36	7.86	R. D. Knight, Little River, Fla
Kentucky Brand—Pulverized Tobacco Stems....	479	.....	.....	.....	.....	2.89	10.14	Willson & Toomer Fert. Co., Jacksonville, Fla.
Cotton Seed Meal	480	.....	.....	.....	.....	7.02	.....	Schroeder & Auguinbaw, Quincy.
Fertilizer	481	14.25	4.90	0.32	5.22	3.57	12.99	J. F. Adams, Winter Park, Fla.
Sulphate of Potash	483	.....	.....	.....	.....	.....	50.48	Thos. W. Williams, Tampa, Fla.
Fertilizer	484	9.85	6.78	1.70	8.48	6.15	6.77	J. G. Powers, Terra Ceia, Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid			Ammonia.	Potash (K2O)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Sea Island Cotton Seed...	485	....	....	....	....	4.14	....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	486	....	....	....	....	4.92	....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	487	....	....	....	....	5.62	....	Florida Mfg. Co., Madison, Fla.
Fertilizer	488	....	5.20	0.77	5.97	1.86	13.15	H. O. Wordenhoff, Plant City, Fla
Fertilizer (light)	489	....	7.56	1.59	9.15	4.65	7.61	Mrs. E. M. Lane, Delray, Fla.
Fertilizer (dark)	490	....	6.12	0.66	6.78	4.28	7.24	Mrs. E. M. Lane, Delray, Fla.
Dried Blood	491	....	....	....	....	14.85	....	J. T. Stanley, Jensen, Fla.
Raw Ground Bone	492	....	9.53	13.98	23.50	4.50	....	J. T. Stanley, Jensen, Fla.
Wood Ashes	493	....	....	....	....	....	0.24	J. T. Stanley, Jensen, Fla.
Ground Tobacco Stems ..	494	....	....	....	....	3.18	9.28	J. T. Stanley, Jensen, Fla.
Cotton Seed Meal	495	....	....	....	....	7.75	....	Schroeder & Auguinbaw, Quincy.
Cotton Seed Meal	496	....	....	....	....	7.71	....	James B. Bours, Jacksonville, Fla
Acid Phosphate	497	....	18.74	0.75	19.49	....	....	Goulding Fert. Co., Pensacola.
Fertilizer (acid phosphate)	498	14.40	13.64	0.53	14.17	0.00	0.00	J. D. Clark, Mt. Pleasant, Fla.
Fertilizer No. 1..........	499	11.30	7.05	1.01	8.06	4.60	8.42	B. G. Hewet, Pebble. Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid.			Ammonia.	Potash (K20.)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Fetilizer No. 2	500	11.35	7.10	1.16	8.26	4.51	8.49	B. G. Hewet, Pebble, Fla.
Fertilizer	501	.....	0.00	0.00	0.00	4.42	0.00	Peter Gardener, Palatka, Fla.
Guano	502	.....	.....	.....	26.13	3.71	3.14	James Holmes, Jensen, Fla.
Acid Phosphate	503	.....	13.68	2.05	15.73	.....	.....	Prof. O. J. Moore, Lisbon, Fla.
Crude Carbonate of Potash	504	.....	.....	.....	.....	.....	38.85	J. Hirschburg, Tallahassee, Fla.
White Carbonate of Potash	505	.....	.....	.....	.....	.....	62.62	J. Hirschburg, Tallahassee, Fla.
Fertilizer	506	10.85	7.30	1.26	8.56	3.18	3.52	W. M. Girardeau, Monticello, Fla.
Fertilizer	507	.....	9.71	1.56	11.27	5.36	7.68	P. L. Fiveash, Alliance, Fla.
Fertilizer	508	7.35	8.12	1.20	9.32	4.01	8.71	C. B. Robbinson, Corno, Fla.
Cotton Seed Meal	509	.....	.....	.....	.....	7.13	.....	J. E. Wirick, Jr., Lloyd, Fla.
Fertilizer	510	.....	6.10	5.57	11.67	2.08	8.46	R. L. McMullen, Clearwater, Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	511	10.45	9.99	1.96	8.95	4.63	4.86	Johnson & Co., Leesburg, Fla.
Fertilizer No. 1..........	512	9.10	7.87	0.73	8.60	2.24	1.28	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 2..........	513	11.15	9.11	3.00	12.11	2.12	1.84	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 3..........	514	10.10	8.43	2.68	11.11	2.13	2.15	J. W. McKeown Co., Concord, Fla.
Ferilizer No. 4..........	514	11.30	10.52	3.26	13.78	2.47	1.89	J. W. McKeown Co., Concord, Fla.
Blood, Bone and Potash..	516	14.20	9.91	2.95	9.86	3.80	4.44	J. H. Dishong, Dover, Fla.
Dark Cotton Seed Meal and Potash	518	9.25	.....	.....	2.03	5.02	3.81	R. L. Goodwin, St. Pierce, Fla.
Ground Tobacco Stems ..	519	.....	.....	.....	.....	2.92	9.24	Armour Fertilizer Works, Jacksonville, Fla.
Fertilizer	520	14.61	7.75	2.76	10.51	2.29	2.23	J. H. Hinton, Dover, Fla.
Fertilizer No. 3	521	6.95	8.49	1.95	10.44	2.15	13.71	E. J. Yates, Lakeland, Fla.
Fertilizer No. 2	522	10.95	7.22	1.39	8.61	4.46	8.07	E. J. Yates, Lakeland, Fla.
Fertilizer No. 1..........	523	14.25	8.17	3.02	11.19	2.22	2.26	E. J. Yates, Lakeland, Fla.
Fertilizer	524	9.25	8.63	0.72	8.75	4.44	11.44	H. Price Williams, Miami, Fla.
Rock Phosphate	525	.....	.....	.....	37.16	.....	.....	T. D. Hawkins, King's Ferry, Fla.

For values see heading "Bureau of Fertilizers."

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample' sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on following pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a "Special Sample."

DEPARTMENT OF AGRICULTURE, DIVISION OF CHEMISTRY.

R. E. ROSE, STATE CHEMIST, ANALYSIS OF FERTILIZERS, 1904, MARION G. DONK, ASSISTANT CHEMIST.

Samples taken by State Chemist under Section 1, Act approved May 22 1901.

NAME OF BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Cotton Seed Meal	311	**Guarant'd Analysis.**	.....	......	.....	......	7 35	......	Southern Cotton Oil Co., Washington, Ga.
		Official Analysis....	.....	....		......	8.12	......	
Tobacco Dust	312	**Guarant'd Analysis.**	.....	......	.....	.....	1 20	2.50	Tampa Fert Co, Tampa, Fla.
		Official Analysis....	....	......	.....	......	1.38	2.80	
Hard Wood Ashes	313	**Guarant'd Analysis.**	......	......	......	......	......	5.50	Blackshear Manufa'g Co., Blackshear, Ga.
		Official Analysis....	......	......	......	......	.....	4.60	
H. G. Dissolved Bone Black	314	**Guarant'd Analysis.**	10.00	16.00	......	......	......	......	Armour Fert. Co., Jacksonville.
		Official Analysis....	11 30	20.26	0 29	20.55	......	.....	
Acid Phosphate	315	**Guarant'd Analysis.**	......	14.00	.....	......	.....	......	Tampa Fert. Co, Tampa, Fla.
		Official Analysis....	13.90	13.76	0.35	13.90	......	......	

Steamed Bone Flour....	316	**Guarant'd Analysis.**	......	......	......	23.00	3.00	.....	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	5.75	13.38	13.46	26 84	3 85	.....	
H. G. Vegetable Manure.	317	**Guarant'd Analysis.**	10 00	5 00	2 00	.....	4 00	6 00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	12 10	7 64	2 05	9 69	4 16	5 98	
Fruit and Vine Manure.	318	**Guarant'd Analysis.**	8 00	6 00	1 00	......	2 00	12 00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	8 95	8 31	0 64	8 95	2 42	11 09	
Ober's Fruit and Vine..	319	**Guarant'd Analysis.**	11 00	6 00	2 00	......	2 50	10 00	Ober & Sons, Baltimore, Md.
		Official Analysis....	6 95	8 93	1 54	10 47	3 27	9 36	
Ober's Vegetable Manure..................	320	**Guarant'd Analysis.**	14 00	6 00	1 00	......	5 00	6 00	Ober & Sons, Baltimore, Md.
		Official Analysis....	13 70	7 87	1 78	9 65	5 43	5 96	
Baugh's Special Orange Tree.................	321	**Guarant'd Analysis.**	12 00	5 00	2 00	......	2 00	10 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	6 20	8 18	1 97	10 15	2 39	9 69	
Baugh's Vegetable Manure.................	322	**Guarant'd Analysis.**	12 00	6 00	4 00	......	5 00	7 00	Baugh & Sons, Baltimore; Md.
		Official Analysis....	13 35	6 71	1 71	8 42	5 48	6 88	
Double Strength of Potash..................	323	**Guarant'd Analysis.**	10 00	5 00	2 00	......	1 50	10 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7 55	6 65	1 09	7 74	2 05	11 40	
Peruvian and Fish Guano.............. ..	324	**Guarant'd Analysis.**	10 00	5 00	1 00	......	4 50	5 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	8 35	6 22	2 44	8 66	4 92	6 58	
Potato Mixture.........	325	**Guarant'd Analysis.**	10 00	5 00	2 00	......	3 00	9 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7 90	4 99	2 53	7 52	3 79	8 23	

Peruvian & Fish Guano Double strength of Potasq....	326	Guarant'd Analysis.	......	5.00	1.00	......	4 50	10.00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7.00	6.35	4.65	11.00	4.09	9.56	
Orange Tree Fertilizer..	327	Guarant'd Analysis.	9 00	5 00	2 00	......	3 00	10 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis...	5 20	5 62	1 83	7 45	3 74	10 78	
Vegetable Fertiliz'r No 1	328	Guarant'd Analysis.	8 00	4 00	2 00	.....	4 50	5 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	8 80	3 95	2 76	6 71	4 41	6 04	
Fish and Potash........	329	Guarant'd Analysis.	9 00	3 00	2 00	......	6 00	5 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	9 90	3 19	1 29	4 48	6 35	6 66	
Bean Special...........	330	Guarant'd Analysis.	8 00	4 00	3 00	......	3 50	8 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	4 90	4 24	3 04	7 28	4 61	7 85	
Cuke Special...........	331	Guarant'd Analysis.	9 00	3 50	2 00	......	4 00	8 00	Standard Fertilizer Co, Gainesville, Fla.
		Official Analysis....	4 75	3 15	2 21	5 36	4 24	8 52	
Early Trucker.........	332	Guarant'd Analysis.	7 00	4 00	2 00	.....	5 00	5 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	6 80	3 52	1 98	5 50	5 43	5 09	
Lettuce Special.........	333	Guarant'd Analysis.	9 00	4 00	2 00	......	6 00	6 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	4 95	4 74	2 81	7 28	6 06	6 99	
Strawberry Special Fertilizer...............	334	Guarant'd Analysis.	8 00	6 00	......	......	3 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	9 80	5 91	2 22	8 13	3 98	5 14	

Champion Citrus Compound	335	Guarant'd Analysis. Official Analysis....	10 00 11 25	6 00 5 86	...... 0 93	...... 6 77	3 00 4 03	14 00 11 50	Va.-Car. Chem. Co., Savannah, Ga.
Old Dominion Potato Manure	336	Guarant'd Analysis. Official Analysis....	8 00 14 50	7 00 5 37	..... 1 16	..... 6 51	5 00 5 09	8 00 8 42	Va.-Car. Chem. Co., Savannah Ga.
Special Vegetable Grower	337	Guarant'd Analysis. Official Analysis....	8 00 12 12	8 00 8 28	...... 1 80	...... 10 08	3 00 3 01	3 00 3 06	Va.-Car. Chem. Co., Savannah, Ga.
Tiptop Tomato Trucker	338	Guarant'd Analysis. Official Analysis....	8 00 12 55	7 00 7 23	...... 1 70	..... 8 93	4 00 4 59	5 00 5 16	Va.-Car. Chem. Co., Savannah, Ga.
Fruit and Vine	339	Guarant'd Analysis. Official Analysis....	8 00 11 35	6 00 5 88	...... 1 03	...... 6 91	2 50 3 09	10 00 9 81	Va.-Car. Chem. Co., Savannah, Ga.
Southern States Special.	340	Guarant'd Analysis. Official Analysis....	...... 11 65	6 00 8 49	...... 1 53	...... 10 02	4 00 3 59	5 00 5 98	Va.-Car. Chem. Co., Savannah Ga.
Cotton Seed Meal	341	Guarant'd Analysis. Official Analysis...	....	....	....	2 50	8 00 8 68	1 50	Southern Cotton Oil Co., Pensacola.
Sterns Ammoniated Raw Bone	342	Guarant'd Analysis. Official Analysis....	15 00 15 75	8 00 9 47	1 00 2 06	..... 11 53	2 00 2 10	2 00 1 48	Standard Guano & Chem. M'f'g. Co., New Orleans.
Baltimore Soluable Bone	343	Guarant'd Analysis. Official Analysis....	15 00 14 95	10 00 10 32	1 00 3 70	...... 14 11	1 00 1 47	1 00 1 11	Georgia Chemical Co., Augusta, Ga.
Cumberland Standard Fertilizers	344	Guarant'd Analysis. Official Analysis....	14 00 13 40	8 00 8 65	1 00 0 52	...... 9 17	2 00 1 98	2 00 1 97	Mutual Fertilizer Co., Savannah.

Scotts H. G. Acid Phosphate	345	Guarant'd Analysis.	12 00	14 00	2 00	.....	.....	.....	Va.-Car. Chem. Co., Montgomery, Ala.
		Official Analysis....	14 00	15 27	1 84	17 11	.....	.....	
Champion Farmers' Choice	346	Guarant'd Analysis.	15 00	8 00	1 00	.....	2 00	2 00	Standard Guano & Chem. M'f'g. Co., New Orleans.
		Official Analysis....	11 70	9 38	1 25	10 63	2 37	2 77	
Vegetable Compound	347	Guarant'd Analysis.	16 00	7 00	1 00	.....	4 00	4 00	Goulding Fertilizer Co., Pensacola.
		Official Analysis....	14 05	9 82	1 93	11 75	2 51	4 52	
Baltimore Soluble Bone	348	Guarant'd Analysis.	15 00	10 00	1 00	.....	1 00	1 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	13 75	10 06	2 03	12 14	0 84	0 93	
Bone and Potash	349	Guarant'd Analysis.	15 00	10 00	1 00	.....	.....	2 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	12 30	10 82	2 57	13 38	.....	1 84	
H. G. Acid Phosphate	350	Guarant'd Analysis.	16 00	15 00	1 00	.....	.....	.....	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	13 20	16 92	0 43	17 35	.....	.....	
Hard Wood Ashes	351	Guarant'd Analysis.	.....	.....	.....	.....	.....	5 50	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	.....	.....	.....	.....	.....	5 06	
H. G. Sulphate of Potash	352	Guarant'd Analysis.	.....	.....	.....	.....	.....	50 00	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	.....	.....	.....	.....	.....	50 28	
Acid Phosphate	353	Guarant'd Analysis.		14 00	.....	.....	.....	.....	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	14 25	14 75	1 02	15 47	.....	.....	
Sulphate of Ammonia	354	Guarant'd Analysis.	.....		.....	.....	24 00	.....	Manatee Fertilizer Co., Palmetto, Fla.
		Official Analysis	.....		.....	.....	25 09	.....	

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NUMBER 3

FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

MAY 1, 1904.

B. E. McLIN
COMMISSIONER OF AGRICULTURE.
TALLAHASSEE, FLORIDA.

Part 1—Crops. Part 2—Weather Report,
Part 3—Fertilizers. Part 4—Miscellaneous.

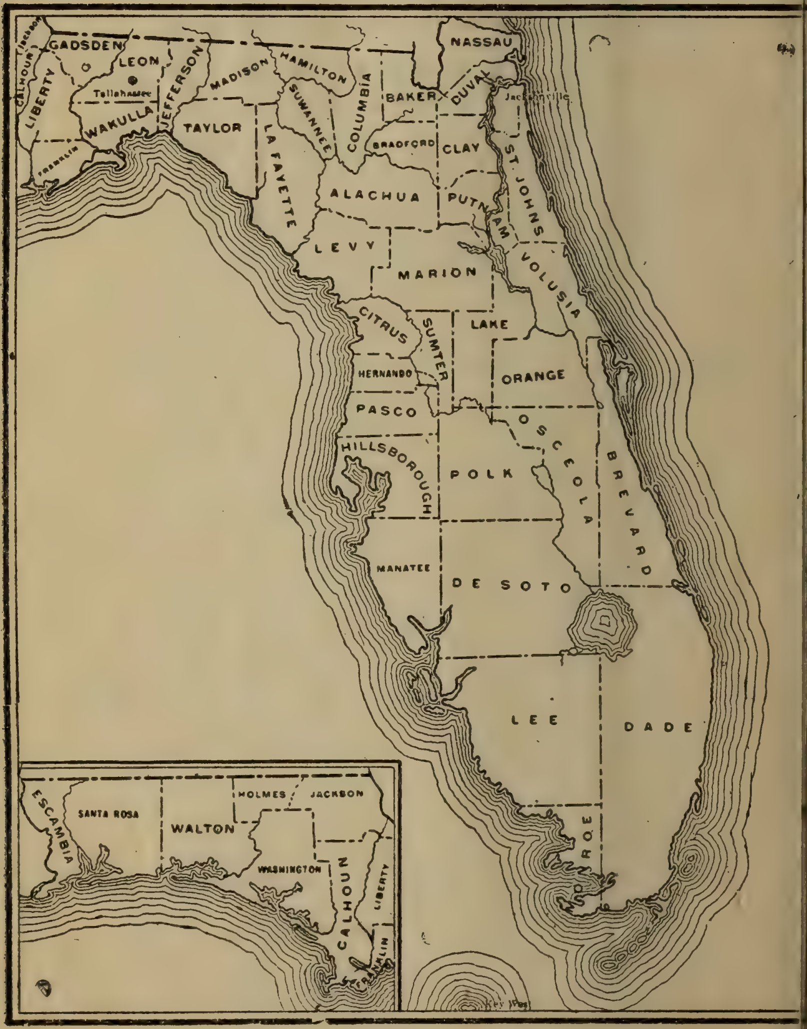
Entered January 31, 1903, at Tallahassee, Florida as second-class matter, under Act of Congress, of June, 1900.

These Bulletins are Issued free to those requesting them.

TALLAHASSEE, FLA.,
I. B. HILSON, STATE PRINTER.

County Map of the State of Florida.

(For the Bulletin.)



PART I.

CROPS.

DEPARTMENT OF AGRICULTURE.

Hon B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

Alachua County.—The weather is so dry that some crops have not yet come up, and those that have are suffering greatly for rain; the stands of crops are nearly all imperfect because of the dry weather. Furit trees are doing well.

Baker County.—Crops that are up show fairly good stands, but the weather is so dry that they are slow to come up, and also grow very slow, on account of cool nights and no rain.

Bradford County.—Crops are doing very well, with very good stands. Vegetable crops are good. Strawberry crop very fine also peaches.

Brevard County.—The seasons have been good; orange trees are looking very fine, and crops promises to be large. Condition of field and other crops about normal, and stands are generally good. Other fruit trees are doing well and good crops in prospect.

Calhoun County.—Owing to dry weather, stands of crops are poor; some are just coming up and some are dying for want of rain; corn is looking fairly well, but oats poor on account of dry weather; sugar cane is poor and stand is bad; melon crops doing well, but must have rain soon; cotton and late oats will be cut short.

Citrus County.—Extremely dry weather has very materially affected oats. Stands of crops are generally very good, but the condition is not so good on account of drought. Fruit trees doing well. Peaches and grapes will be good crops.

Clay County.—Stands and condition of crops are usually good, but nights are cool, and we are needing rain very much.

Columbia County.—All crops that are up show good stands, but it is rather too dry for late planting to come up; the soil has been given much better preparation than usual; labor is scarce and very hard to get on the farm.

Dade County.—The seasons have been good, and stands and conditions of crops are also good; all fruit trees are growing finely, and promise good crops.

DeSoto County.—Cool, dry, and windy weather, seems to be the rule; rain will soon be needed. Stands of crops are good, also conditions, and with fair seasons DeSoto county will produce both good field and orchard crops.

Escambia County.—All crops that are up have good stands and are looking well, there is an increase in acreage generally of about one third. Peaches and grapes will be fine.

Franklin County.—In sandy land, rain is badly needed, all crops in low land are doing fine.

Gadsden County.—There is generally a good stand of crops that have come up, some are not up yet, and some not finished planting; condition of crops is fairly good, though it is getting too dry, and nights too cool for crops to grow well.

Hamilton County.—Stands of crops will average fair, some are good and some are poor, and all need rain; some seed planted that cannot come up till we have rain.

Hillsborough County.—Long continued drought is cutting short the crops of beans, Irish potatoes, cucumbers, etc., crops have made well up to this time. Melons are doing well, but need rain; fruit trees doing well.

Holmes County.—At this time conditions and weather are favorable; stands of crops are very good; some are just being planted; peach and grape crops will be good.

Jackson County.—Most crops have very good stands and are in fair condition; strawberries and melons doing well, will have a pretty good peach crop.

Jefferson County.—Stands of crops are good with all crops so far, and all are in good average condition, melons are rather poor and peaches are a short crop; vegetable crops are fairly good, but weather is a little too dry.

Lake County.—Crops have generally done well and in average good condition. Fruit trees doing well, and pea cheswill make a fine crop. Citrus trees have made heavy bloom.

Lee County.—All crops are fine as could be reasonably expected, stands are good, and conditions of crops could be little more satisfactory; all crops are turning out fine, and gruit trees all have a heavy bloom on, and are in extra fine condition; peach crop good.

Leon County.—The stand of crops that have come up is good, but some planting has been very much delayed on account of long continued drought; crops of all kinds have suffered greatly for rain, and with the cool high winds that continue to blow, growth has been practically at a standstill; peach and plum crops are very good.

Levy County.—Stands of crops are about an average, and condition has been good, but we are beginning to need rain. Melons are doing well, and peaches and grapes will be a full crop; vegetable crops are also fine.

Madison County.—Crops will average a good stand, but at present it is too dry for them to grow well, and be in good condition; melon crops are doing very well but are also affected by dry weather.

Manatee County.—Crops came up well, and have grown well, but it is so very dry now that all crops are suffering very much for rain; with ordinary good seasons, there will be fine and full crops all around; peaches will yield a fine crop, trees are loaded with fruit.

Marion County.—Stands of crops are good. The melon crop will be very large in this ocunty and is now in a splendid condition, but rain would help very much. If we do not have rain in a short time all crops will suffer.

Osceola County.—Long continued drought hurting tomatoes; rain would greatly benefit all crops. Some red spider is seen on grape fruit trees. Peach crop will be very fine.

Polk County.—The drought still continues, though in some sections of the county good showers have fallen; potatoes and beans have been cut short; early cabbage did well, late cabbage were damaged by drought; crops are doing as well as couldbe expected considering the long dry spell they have had to contend with.

SANTA ROSA COUNTY.—It is very dry here, and crops that were planted late are not coming up yell; stands of early planted crops are generally good; conditions only medium; nights too cool and windy for crops to grow much.

SUMTER COUNTY.—It is very dry here, but corn, tomatoes, water melons and citrus trees are standing it very well; velvet beans are very poor; several other crops have been greatly damaged by the long drought.

SUWANNEE COUNTY.—Crops are not coming up as well as they should on account of dry weather; some crops are not yet planted. There will be an increased acreage in broom corn this year.

TAYLOR COUNTY.—Crops are slow to come up; corn is good, and so is sugar cane; the dry cool weather is keeping all crops from growing.

WALTON COUNTY.—Crops are very small, and growing poorely on account of the very unfavorable weather; stands are indifferent and condition low for the same reason.

WASHINGTON COUNTY.—Crops stands are only medium on account of unfavorable weather; some crops not yet finished planting, and others not yet up; cool windy nights and dry weather is keeping growth of all crops back.

REPORT OF STAND AND CONDITION OF CROPS FOR APRIL, 1904, AS COMPARED WITH 1903; ALSO CONDITION OF FRUIT TREES.

COUNTIES	Upland Cotton		Sea Island Cotton		Corn		Oats		Sugar Cane		Rye	
	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition
Alachua	....	....	70	60	80	70	90	70	30	40	....	....
Baker	....	....	95	95	80	75	100	75	50	75	....	....
Bradford	....	....	100	90	100	90	100	100	85	100	....	....
Brevard	....	....	....	....	....	....	....	....	100	100	....	....
Calhoun	70	65	....	....	100	90	100	70	60	65	....	....
Citrus	....	....	....	....	90	85	100	75	100	100	...	....
Clay	....	....	100	100	110	110	110	75	80	75	....	....
Columbia	....	....	110	100	110	100	100	125	100	100	100	100
Dade	....	...	..	....	....	....	....	....	...	....	....	....
DeSoto	....	....	....	....	100	100	100	100	95	100	90	100
Escambia	100	100	....	....	100	100	100	75	100	100	100	85
Franklin	...	....	....	...	80	75	80	70	80	80	....	....
Gadsden	90	100	85	100	100	90	110	125	80	80	100	100
Hamilton	....	....	75	50	75	50	75	50	50	50	...	....
Hillsboro	....	....	....	...	60	100	..	....	75	100	....	....
Holmes	100	100	....	....	110	110	90	90	110	110	....	....
Jackson	80	100	80	80	100	100	100	100	100	100	100	100
Jefferson	90	100	85	90	100	100	100	110	100	100	....	....
Lake	....	....	....	....	100	100	50	50	50	50	....	....
Lee	....	....	....	....	100	120	100	125	100	125	100	100
Leon	85	90	...	....	100	80	100	75	85	80	....	....
Levy	....	....	90	100	100	105	100	90	90	100	100	100
Madison	75	75	100	100	100	100	100	100	110	110	100	80
Manatee	....	....	....	...	100	100	120	100	120	100	....	....
Marion	100	100	110	100	100	100	80	75	100	100	80	80
Nassau	....	....	....	....	100	100	..	....	100	90	....	....
Osceola	....	....	..	....	110	120	100	100	100	100	....	....
Pasco	....	....	....	....	100	100	100	90	100	100	....	....
Polk	....	....	....	....	100	100	100	100	100	100	....	....
Santa Rosa	50	50	....	....	90	85	85	65	65	75	....	....
Sumter	....	....	..	....	85	70	75	65	50	50	....	....
Suwannee	....	....	90	100	100	100	70	70	80	90	50	50
Taylor	....	....	80	100	100	90	....	....	100	100	....	....
Walton	80	75	....	...	90	90	90	90	80	80	....	....
Washin'ton	90	85	90	85	95	80	80	90	100	75	75	70
Gen'l av'ge per cent.	92	95	90	90	96	93	96	87	86	88	91	88

CONDITION OF CROPS—Continued.

COUNTIES	Rice		Sweet Potatoes		Field Peas		Cassava		Velvet Beans		Cabbage	
	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition
Alachua...	....	....	....	....	....	....	...	....	70	70	90	90
Baker.....	80	80	75	75	...	....	...	....	....	....	....	....
Bradford..	....	....	....	....	....	....	....	....	....	....	....	....
Brevard...	100	100	100	100	100	100	....	....	100	100	....	....
Calhoun...	....	....	....	....	....	....	....	...	....	....	75	75
Citrus.....	....	....	100	100	100	100	....	....	95	100	100	100
Clay.......	....	...	100	100	100	100	100	100	100	100	100	100
Columbia..	100	100	....	....	...	....	....	....	....	....	....	....
Dade.......	....	....	100	100	100	100	..	...	100	100	....	...
DeSoto....	100	100	100	100	105	100	95	95	110	100	110	100
Escambia..	100	100	100	100	100	100	....	....	100	100	100	100
Franklin...	....	....	80	75	85	75		....	80	70	80	75
Gadsden...	....	..	60	60	....	....	100	100	125	120	....	....
Hamilton..	50	50	50	50		....	....	.	50	50	....	....
Hillsboro..	..	....	....	....	100	100	100	100	100	100	....	....
Holmes....	100	100	120	120	100	100	....	....	....	....	100	100
Jackson..	....	....	100	100	....	....	....	....	....	....	....	....
Jefferson..	....	....	95	95	90	85	100	100	100	100	85	85
Lake.......	....	....	....	....	....	....	25	50	100	100	50	76
Lee........	125	125	125	125	100	100	110	110	100	100	120	120
Leon.......	....	....	100	100	....	....	....	....	100	100	100	100
Levy.......	100	100	100	100	90	100	100	100	90	100	100	100
Madison..	80	75	....	....	....	....	....	....	....	....	....	....
Manatee...	120	100	100	100	100	100	100	100	150	200	120	100
Marion....	90	90	100	100	100	100	110	100	100	100	105	100
Nassau....	....	....	100	85	100	80	....	....	...	....	100	100
Osceola....	....	...	....	...	110	100	110	90	125	100	120	125
Pasco......	100	85	100	90	100	100	100	85	110	100	100	110
Polk......	....	....	....	...	100	100	100	100	100	100	100	150
Santa Rosa	...	....	....	....	...	....	....	....	....	....	.. .	....
Sumter....		....	....	....	....	....	....	....	60	50	....	....
Suwannee..	50	60	....	...	.	....	....	....	....	...	....	....
Taylor.....	...	....	....	....	....	....	....	....	...	....	....	....
Walton....	80	75	...	....	....	...	....	....	....	....	....	....
Washin't'n	....	....	....	...	....	....	60	60	....	....	....	....
Gen'l av'ge per cent	92	89	95	94	99	97	94	92	98	98	98	100

CONDITION OF CROPS—Continued.

COUNTIES	Irish Potatoes		Tomatoes		Cucumbers		Beans		English Peas		Egg Plants	
	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition
Alachua...	70	75	70	70	70	75	70	75	100	100	....	....
Baker.....	90	90	....	....	....	....	....	....	....	....	....	....
Bradford..	80	100	....	....	....	....	100	85	....	....	....	....
Brevard...	100	85	190	100	....	....	100	100	....	....	100	100
Calhoun...	100	100	....	....	....	....	100	100	....	....	....	....
Citrus....	95	75	90	100	100	90	100	100	90	75	....	....
Clay......	100	100	100	100	100	100	100	100	....	....	....	....
Columbia.	100	100	....	....	....	....	100	100	100	95	....	....
Dade.....	....	....	100	105	100	100	....	....	....	....	100	100
DeSoto....	120	100	100	100	95	95	130	95	100	100	90	95
Escambia.	100	100	100	90	100	85	100	100	100	100	....	....
Franklin..	80	100	....	....	....	....	80	100	....	....	....	....
Gadsden..	80	80	100	100	....	....	....	....	....	....	....	....
Hamilton..	75	50	50	50	50	50	50	50	....	....	....	....
Hillsboro	100	100	....	....	100	100	100	75	....	....	....	....
Holmes...	105	110	90	90	80	80	110	110	120	120	....	....
Jackson...	....	....	....	....	....	....	....	....	....	....	....	....
Jefferson..	100	100	60	60	60	60	100	100	100	100	....	....
Lake......	100	100	50	75	....	....	100	100	....	....	....	....
Lee.......	125	125	80	80	100	100	110	110	100	100	100	100
Leon.......	100	100	100	75	....	....	100	100	100	75	100	75
Levy......	100	100	100	100	75	90	100	100	100	100	....	....
Madison...	90	90	80	80	75	75	60	60	100	100	....	....
Manatee...	110	100	120	100	120	100	120	100	....	....	100	100
Marion....	100	90	90	90	100	90	90	100	90	90	100	100
Nassau....	100	100	85	80	....	....	100	100	....	....	....	....
Osceola...	110	110	100	85	100	85	100	100	100	100	75	80
Pasco.....	100	100	100	100	100	90	100	100	100	100	....	....
Polk......	100	70	100	70	100	100	100	60	....	....	50	100
Santa Rosa	100	75	85	75	100	75	75	70	....	....	....	....
Sumter....	....	....	100	100	100	100	80	50	..	....	....	....
Suwannee.	....	....	....	....	....	....	....	....	....	....	....	....
Taylor.....	....	....	....	....	....	....	....	....	....	....	....	....
Walton....	95	95	....	..	....	....	....	....	....	....	....	....
Washington	80	80	....	....	....	....	....	....	....	....	....	....
Gen'l av'ge per cent.	97	93	90	86	91	87	95	90	100	97	91	

CONDITION OF CROPS—Continued.

COUNTIES	Peanuts		Hay		Tobacco		Strawberries		Water. melons		Cantaloupes	
	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition	Stand	Condition
Alachua...	50	60	....	....	....	....	45	50	60	50	70	60
Baker......	....	....	....	....	...	....	...	....	....	....	....	...
Bradford...	....	....	....	....	....	....	100	100	....	....	....	....
Brevard...	....	...	...	....	....	....	....	....	100	100	....	...
Calhoun....	....	....	....	....	....	....	....	....	100	90	....	....
Citrus.....	100	100	75	75	...	....	....	....	100	100	....	....
Clay.......	100	100	....	....	....	....	....	....	....	....	....	....
Columbia..	....	....	....	...	....	....	....	....	....	....	....	....
Dade......	....	....	....	....	....	....	....	....	....	....	....	....
DeSoto....	95	90	100	100	90	90	110	100	110	100	110	100
Escambia..	100	85	100	80	100	80	100	100	100	100	100	90
Franklin...	....	....	....	....	....	....	85	75	80	80	80	70
Gadsden...	110	110	....	....	110	110	125	125	....	....	....	....
Hamilton..	50	50	75	50	....	....	50	50	50	50	....	...
Hillsboro..	....	...	....	....	..	....	75	50	100	100	....	....
Holmes....	100	100	....	....	105	105	100	100	120	120	80	80
Jackson....	....	....	....	....	....	....	110	110	100	100	....	....
Jefferson..	100	100	....	....	....	....	100	80	100	75	....	....
Lake......	....	..	....	....	....	....	25	50	100	100	....	....
Lee.......	110	110	150	150	100	100	100	100	100	100	100	100
Leon......	....	....	....	....	100	75	75	75	100	80	100	80
Levy......	100	100	....	....	....	....	....	....	90	100	100	100
Madison...	....	....	....	....	....	....	....	....	100	100	80	80
Manatee ..	..	....	120	100	....	....	120	100	100	50	100	50
Marion....	100	100	....	....	...	....	110	95	95	100	95	100
Nassau....	....	....	....	....	....	....	....	....	100	100	...	....
Osceola...	100	80	100	100	....	...	100	90	110	110	100	100
Pasco......	100	100	....	....	....	....	....	....	100	100	85	90
Polk......	....	....	....	....	....	....	70	100	70	120	100	100
Santa Rosa	100	75	....	....	....	....	....	....	90	75	50	50
Sumter....	100	75	....	....	....	....	....	....	80	75	...	....
Suwannee.	...	: ..	....	....	....	....	....	....	....	....	....	....
Taylor.....	75	75	....	....	....	....	....	....	70	70	....	....
Walton....	....	....	....	....	....	....	..	....	65	65	....	....
Washington	90	90	..	....	....	....	....	....	80	75	....	....
Gen'l av'ge per cent..	93	89	103	94	101	93	94	86	92	89	90	83

CONDITION OF CROPS—Continued.

COUNTIES.	Orange Trees	Lemon Trees	Lime Trees	Grape Fruit Trees	Bananas	Pine Apples	Guavas	Peaches	Grapes
	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition
Alachua	70	....	....	......	....	....	..	90	90
Bake	..	....	....	......	....	....	....	.....	......
Bradford	....	....	...	..	....	....	....	200	.... .
Brevard	100	...	...	100	100	.. .	100	.....	....
Calhoun	....		....	.....	....	....	...	85	100
Citrus	100	....	....	100	....	....	...	100	100
Clay	....	....	.	......	....	....	....	.....	......
Columbia	....	....	....	......	....	...	...	110	......
Dade	105	100	110	100	100	100	100	.....	......
DeSoto	95	90	90	100	90	100	90	100	100
Escambia	....	...	....	......	..	....	...	100	100
Franklin	....	....	....	.....	....	...	...	90	90
Gadsden	....	...	...	......	....	....	....	.....	......
Hamilton	...	....	....	....	....	....	....	50	50
Hillsborough	100	....	...	100	....	....	....	125	......
Holmes	....	....	....	.. ...	...	....	....	100	100
Jackson	....	...	....	...	....	....	....	100	......
Jefferson	....	...	....	......	....	.. :	....	30	90
Lake	100	75	....	100	...	..	10	100	100
Lee	110	100	100	110	100	100	125	100	100
Leon	75	....	....	......	....	....	....	85	100
Levy	100	....	....	.....	....	....	...	110	100
Madison	....	...	....	......	....	....	....	.....	......
Manatee	120	100	100	120	100	110	80	80	80
Marion	110	....	....	110	....	....	....	100	100
Nassau	....	...	....	......	....	....	....	100	......
Osceola	100	110	110	110	110	100	100	120	100
Pasco	150	...	...	100	....	....	....	100	100
Polk	120	100	100	120	....	70	....	100	100
Santa Rosa	....	...	.. .	......	....	....	....	100	100
Sumter	100	...	....	100	....	....	....	100	......
Suwannee	....	...	....	......	....	....	....	100	100
Taylor	....	...	....	......	....	....	....	.....	......
Walton	..	...	....	......	....	....	....	60	......
Washington	....	...	....	......	....	....	....	.....	......
General Average Per Cent	101	96	102	105	100	97	89	98	95

PART II.

WEATHER REPORT

U. S. DEPARTMENT OF AGRICULTURE.

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

Central Office: Washington, D. C.

FLORIDA SECTION:

A. J. MITCHELL, Section Director.,

JACKSONVILLE, FLA.

REPORT FOR MARCH, 1904.

SALIENT CLIMATIC FEATURES.

ATMOSPHERIC PRESSURE.

	Inches.
Mean, as determined from records of 4 stations	30.05
Departure from the normal, 4 records	-0.01
Highest observed, at Jacksonville on the 17th	30.32
Lowest observed, at Jacksonville on the 7th	29.77
Absolute range for the State	0.55

TEMPERATURE.

	Degrees
Mean, as determined from records of 61 stations	67.5
Departure from the normal, 29 records	+2.8
Highest monthly mean, at Miami	75.3
Lowest monthly mean, at Wausau	62.4
Highest recorded, at Macclenny on the 22d	94
Lowest recorded, at Tallahassee on the 16th and Wausau on the 5th	30
Absolute range for the State	64

PRECIPITATION.

	Inches.
Average, as determined from records of 58 stations	1.62
Departure from the normal, 28 records	-1.76

Greatest amount for any 24 hours, at Jupiter on the 29th	2.30
Greatest monthly amount, at Bonifay	4.00
Least monthly amount, at Flamingo	T.
Average number of days on which 0.01 or more fell	5

WIND.

Prevailing wind direction	Southwest.

WEATHER.

Average number of days	17
Average number of partly cloudy days	10
Average number of cloudy days	4

MISCELLANEOUS PHENOMENA.

(Dates of.)

Fog, Dense.—Federal Point, 19; Huntington, 23; Pinemount, 3, 4, 13, 18, 20, 21; Sumner, 19; Eustis, 19, 24; Fort Meade, 1; Titusville, 4; Manatee, 19; Molino, 12; Pensacola, 1, 12, 20, 21, 22, 23, 24, 26; Stephensville, 22.

Frosts, Light.—Gainesville, 15; Jacksonville, 15; Lake City, 15; Pinemount, 10; Apalachicola, 15; Marianna, 29; Molino, 8, 15, 27, 28; Pensacola, 28; Stephensville, 15; Wewahitchka, 14.

Hail.—Fort Pierce, 5; Titusville, 28; Bonifay, 3, 14; Marianna, 14.

High Winds.—Jacksonville, 4, 5, 11; Sumner, 4; Grasmere, 4, 5; Titusville, 29; Avon Park, 29, 30; Pensacola, 3, 6, 14, 26; Wewahitchka, 13.

Halo, Lunar.—Tampa, 1, 27, 28.

Halo, Solar.—Tampa, 6, 19, 27.

Thunderstorms were reported at voluntary stations as follows: On the 2d, 1; 3d, 4; 4th, 3; 5th, 1; 6th, 1; 7th, 3; 11th, 1; 13th, 1; 14th, 7; 17th, 2; 19th, 3; 20th, 2; 21st, 1; 25th, 1; 26th, 3; 27th, 4; 28th, 4. And at Weather Bureau stations: 3d, 1; 4th, 2; 6th, 2; 7th, 1; 14th, 3; 15th, 1; 20th, 2; 21st, 1; 25th, 1; 26th, 2; 27th, 3.

COMPARATIVE TEMPERATURE AND RAINFALL DATA FOR MARCH, WITH DEPARTURES FROM NORMAL, DURING THE PAST THIRTEEN YEARS.

Year	1892	1893	1804	1895	18 96	1897	1898	1899	1900	1901	1902	1903	1904
Mean	62.0	63.9	66.9	65.4	66.0	70.6	67.5	66.3	63.6	62.1	64.8	60.1	67 5
Depar	—2.7	—0.8	+2 2	+0.7	+1.3	+5.9	+2.8	+1.6	—1.1	—2.6	pl 0.1	pl4.4	pl2.8
Total	1.55	4.90	1.77	2 16	2.43	2.06	1.54	1.96	6.82	5.65	4.63	5.52	1.62
Depar	—1.83	+1.52	—1.61	—1.28	—0.95	—1.32	—1.84	—1.42	+3.44	+2.27	pl1.25	pl2 14	—1.76

PRESSURE AND WIND TABLE.

STATIONS	Atmospheric Pressure					Wind Velocity in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville..	30.06	30.32	17	29 77	7	7,495	36	n	5	100	29	76
Jupiter	30.06	30.22	17	29.82	7	8.193	30	ne	29	95	48	78
Key West.....	30.02	30.19	17	29 86	7	7.242	30	nw	28	97	54	75
Pensacola.....	*30 08	30.30	4	29.00	13	8,057	42	w	14	98	45	83
Tampa........	30 06	30.28	17	29.83	7	4,579	18	nw	20	97	34	78

*8 a. m, reading only.

CLIMATOLOGICAL DATA FOR MARCH, 1904.

				Temperature, in degrees Farh.							Precipitation, in inches.					Sky.			
STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.
Northern Section.																			
Archer	Alachua	92	22	66.0	+3.1	89	22	39	11	39	1.55	—2.34	0.56	...	8	13	15	3	sw.
Federal Point	Putnam	10	12	66.7	+3.0	88	21	42	15	34	2.33	—0.53	1.92	...	6	18	10	3	e-w.
Fernandina	Nassau	15	3	64.8	.....	83	23	43	4	30	2.10	.....	0.80	...	15	16	10	5	se.
Fort George†	Duval	15	19	65.0	+2.8	82	3*	46	16	...	.....	.....	.....	...	...	...	...	...	se
Gainesville	Alachua	175	18	67.0	+4.4	91	22	40	15	34	1.35	—2.63	0.48	...	7	19	4	8	e.
Huntington	Putnam	50	8	65.9	+0.4	89	27	40	15	39	1.15	—1.50	0.62	...	6	19	10	2	se.
Jacksonville	Duval	43	34	65.6	+3.6	86	21	42	4	25	1.35	—2.08	0.54	...	8	13	13	5	sw.
Jasper	Hamilton	165	6	65.4	+4.0	90	22	38	15	35	1.61	—4.47	0.05	...	5	16	7	8	sw.
Johnstown	Bradford	125	9	64.7	—0.4	88	22	40	10*	37	1.55	—4.54	1.36	...	3	13	12	6	......
Lake City	Columbia	201	14	66.4	+2.3	91	22	38	15	39	1.19	—3.85	0.40	...	7	5	18	8	sw.
Macclenny	Baker	140	9	64.2	+0.8	94	22	37	15	42	0.97	—3.96	0.43	...	6	22	4	5	e.
Micanopy	Alachua	105	8	.....	.....	...	...	...	...	...	.....	.....	.....	...	...	...	...	...	......
Middleburg	Clay	20	5	.....	.....	...	...	...	...	...	.....	.....	.....	...	...	...	...	...	......
Pinemount	Suwannee	103	2	64.9	.....	92	23	39	15*	39	2.00	.....	0.75	...	9	10	16	5	sw.
St Augustine	St. Johns	10	54	65.8	+3.2	85	27	40	15	34	1.87	—1.05	0.63	...	6	6	7	18	se.
Sumner	Levy	23	14	64.4	+1.2	90	24	35	15	40	0.59	—3.15	0.37	...	3	21	8	8	sw.
Switzerland	St. Johns	...	8	a65.2	+3.2	a86	21	a40	17	a36	2.71	—0.94	0.90	...	7	...	.	.	

CLIMATOLOGICAL DATA FOR MARCH, 1904 —Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Central Section.																			
Bartow.	Polk	17	9	69.6	+2.0	90	26	44	10	35	2.14	—0.26	1.16	...	3	19	12	0	sw.
Brooksville	Hernando	328	12	*b*68.4	+2 7	*b*92	22*	44	10	*b*38	0.20	—2.48	0.20	...	1	...	...	...	s.
Clermont	Lake	110	12	70.2	+2.4	90	23*	49	9	30	2.13	+0.36	1.52	...	5	10	18	3	se.
De Land	Volusia	32	4	66.7	.....	89	26*	43	9*	36	.....	......		...	...	20	9	2	e.
Eustis	Lake	180	14	70.3	+4.3	93	21	45	15	35	0.36	—2.21	0.12	...	6	14	9	8	w.
Fort Mead	Polk	125	21	70.4	+5.0	92	22	43	9*	42	1.67	—0.78	1.06	...	2	29	2	0	e.
Fort Pierce	Brevard	25	13	68.8	+0.0	84	7	52	12	31	3.27	+0.03	1.10	...	4	23	2	6	sc.
Grasmere	Orange	175	8	68 0	+0.6	87	22	48	9*	29	......	......	......	...	...	24	7	0	sw.
Inverness	Citrus	43	4	66 9	...	92	22	39	10	41	0.34	......	0.20	...	2	12	17	2	sw.
Kissimmee	Osceola	65	12	68.8	+2.1	86	22	47	9*	29	0.80	—1.02	0.60	...	3	19	11	1	s.
Malabar	Brevard	..	3	70.6	.....	90	27	47	16	32	0.46	......	0.23	...	3	28	3	0	e.
Merritt's Island	Brevard	20	23	69.9	—2.9	83	21*	52	9	21	1 83	—0.74	0.92	...	4	26	4	1	se.
New Smyrna	Volusia	20	16	*a*67.5	+2.3	*b*90	21*	44	9	*b*33	0.84	—1.85	0.59	...	2	25	3	3	s.
Ocala	Marion	150	17	68.0	+3.9	93	22	41	15	40	0.15	—2 32	0.08	...	2	20	8	3	e.
Orange City	Volusia	50	14	69.2	+3.6	92	22*	39	16	39	1.12	—1.23	0.57	...	3	20	10	1	sw.
Orange Home	Sumter	75	...	68.4	.....	92	22	41	15	38	0.16	......	0.14	...	2	16	14	1	......

CLIMATOLOGICAL DATA FOR MARCH, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hour.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days	Number cloudy days	
Orlando	Orange	98	15	69.8	—3.0	93	21	46	9*	37	1.09	—0.98	1.09	...	1	22	8	1	e.
Plant City	Hillsbor'gh	121	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rockwell	Marion		5	68.0	.	93	22	41	15	38	0.25	.....	0.20	...	3	8	22	1	sw.
St. Leo	Pasco	140	10	68.4	+0.6	90	26	44	10	36	0.19	—3.30	0.10	...	4	21	8	2	e-w.
Tampa	Hillsbor'gh	20	14	69.2	+3.1	88	22	50	9	27	0.77	—2.06	0.33	...	4	18	10	3	w.
Tarpon Springs	Hillsbor'gh	20	20	68.0	+2.4	89	24	46	9	31	1.52	—2.35	0.94	...	4	18	6	7	sw.
Titusville	Brevard	11	13	69.2	+3.7	89	21*	47	9*	30	1.12	2.88	0.46	...	11	16	12	3	se.
Southern Section.																			
Avon Park	De Soto	150	8	70.4	+3.5	90	21	45	9	32	0.96	—2.04	0.61	...	5	25	6	0	e.
Flamimgo	Monroe	11	4	73.4	...	89	10	55	9	30	T	......	T	.	0	27	3	1	se.
Hypoluxo	Dade	..	8	72.0	+1.9	85	13	54	9	27	0.71	—2.01	0.36	...	5	21	7	3	e-se
Jupiter	Dade	28	17	72.1	+4.3	85	14	56	9	22	3.06	+0.12	2.30	...	9	15	15	1	se.
Key West	Monroe	22	34	74.7	+2.0	83	22	65	9	12	1.94	+0.75	1.46	..	4	17	12	2	e.
Manatee	Manatee	16	21	69.4	+3.8	89	22*	43	9	40	1.26	—1.81	0.83	..	4	22	8	1	nw.
Marco	Lee	...	4	72.6	.....	91	23	52	19	32	2.36	.....	1.13	..	7	27	3	1	se.
Miami	Dade	...	8	75.3	+3.8	86	2	60	4	24	3.10	+0.80	2.05	..	4	15	14	2	e.
Myers	Lee	19	21	70.4	+1.9	88	23*	52	9*	28	1.90	—0.87	0.92	...	3	29	2	0	e.
Nocatee	De Soto	43	5	70.2	.....	90	21	42	10	39	2.79	.....	1.61	.	4	16	12	3	e.

CLIMATOLOGICAL DATA FOR MARCH, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Western Section.																			
Apalachicola	Franklin	...	...	64.8	.....	79	3	44	4	26	1.31	......	0.41	...	7	22	3	6	se.
Bonifay	Holmes	116	3	65.0	.....	86	22*	39	15	40	4.00	......	1.10	...	7	9	10	12	s.
Carrabelle	Franklin	12	9	64.6	+2.0	80	4*	40	4	40	0.80	—4.01	0.40	...	2	24	0	7	sw.
DeFuniak Sp'gs	Walton	193	8	63.8	+2.5	87	24	35	4*	43	3 34	—3.26	0.90	...	8	10	18	3	s.
Madison	Madison	...	...	66.5	.....	91	22	36	16	38	2.20	......	0.59	...	6	21	2	8	sw.
Marianna	Jackson	85	5	64.6	.....	90	24	35	29	39	2.91	......	0 88	...	7	0	26	5	sw.
Molino	Escambia	49	1	63.6	.....	87	24	34	4*	43	3.80	......	1.62	...	5	10	4	17	s.
Monticello	Jefferson	207	...	65.3	.....	88	24	41	15	34	1.77	......	0.62	..	6	17	10	4	w.
Pensacola	Escambia	56	25	63.0	+3.5	77	26	37	4	26	1.45	—4.01	0.52	...	10	12	11	8	se.
Quincy	Gadsden	260	4	.....	.....	...	...	..	...	...	......	......	...	...	...	.	...	...	.....
St. Andrew	Washington	12	7	63.8	+1.2	82	25	36	15	34	2 96	+1.64	1.42	...	7	23	4	4	s.
Stephensville	Taylor	...	5	64.3	.....	90	22	37	15	41	0.44	.....	0.44	...	1	7	18	6	sw.
Tallahassee	Leon	193	19	65.2	+6.0	83	23*	30	16	40	1.55	—4.04	0.50	...	5	15	11	5	s.
Wausau	Washington	250	7	a62.4	+0.4	89	23*	30	5	45	3 70	—3.44	1.00	...	9	10	15	6	s.
Wewahitchka	Calhoun	...	5	64.7	.....	87	22*	39	14	39	3.04	......	1.00		7	12	2	17	s.
	State Means	..	...	67.5	+2.8	...	.	...	...	..	1 62	—1.76	...	...	5	17	10	4	sw.

CLIMATOLOGICAL DATA FOR MARCH, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	
Late Report Feb , 1904.																			
Plant City	....	...	...	65.3	+4.5	87	29	32	2	52	4.52	+0.69	1.30	...	4	...	...	...	..

All records are used in determining State means, but the mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation.

a, b, c, etc , following name of station, indicate number of days missing from report.

†Thermometers are not self-registering, and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily.

*More than one day. ‡Weather Bureau.

PART III.

FERTILIZERS.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

STATE VALUATIONS, 1904.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1904.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen).	15 cents a pound
Potash (as actual potash, K2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $1·25 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid	6.22 per cent.	x $1.00—	6.22
Insoluble Phosphoric Acid	1.50 per cent.	x .20—	.30
Ammonia	3.42 per cent.	x 3.00—	10.26
Potash	7.23 per cent.	x 1.10—	7.95
Mixing and bagging			1.25
Commercial value at sea ports			25.98

Or a fertilizer analyzing as follows:

Available phosphoric acid	8 per cent.	x $1.00—	$ 8.00
Ammonia	2 per cent.	x 3.00—	6.00
Potash	2 per cent.	x 1-10—	2.20
Mixing and bagging			1.25
Commercial value at sea ports			$17.45

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of ten per cent. can be made in above valuations, *i*, *e*.:

Available Phosphoric Acid - -	90 cents per unit
Potash (K2O) - - - -	99 cents per unit
Ammonia (or equivelent in nitrogen)	$2 70 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

MARKET PRICES OF CHEMICALS AND FERTILIZING MATERIALS AT SEA PORTS, JAN. 4, 1904.

Ammoniates.	Less than 5 tons	5 to 10 tons.	10 tons & over.
Nitrate of Soda 17 per cent. Ammonia	$50.00	$49.00	$49.00
Sulphate of Ammonia 25 per cent Ammonia	71.00	70.50	70.00
Dried Blood 16 per cent. Ammonia	54.00	53.50	53.00
POTASH.			
High Grade Sulphate Potash 48 per cent. Potash (K2O)	52.00	51.00	50.00
Low Grade Sulphate Potash 26 per cent. Potash (K2O)	32.00	31.00	30.00
Muriate of Potash 50 per cent. Potash (K2O)	46.00	45.00	44.00
Nitrate Potash, 13 Am., 42 Potash (K2O)	82.00	81.00	80.00
Kainit 12 per cent. Potash	14.00	13.50	13.00
Canada Hardwood Ashes 4 per cent. (K2O) Potash	17.00	16.50	16.00
AMMONIA AND PHOSPHORIC ACID.			
High Grade Blood and Bone, 10 10 per cent. Ammonia 7 per cent. Phosphoric Acid	35.00	34.50	34.00
Low Grade Blood and Bone, 6½ per cent. Ammonia, 8 per cent. Phosphoric Acid	27.00	26.50	26.00
Owl Brand Tankage, 5½ per cent. Ammonia	20.00	19.50	19.00

Raw Bone 4 per cent. Ammonia 22 per cent. Phosphoric Acid..	29.00	28.50	28.00
Ground Castor Pomace 6 per cent. Ammonia, 2 per cent. Phosphoric Acid	22.00	21.50	21.00
Bright Coton Seed Meal 8 per cent. Ammonia market quotations	26.00	25.50	25.00
Dark Coton Seed Meal, 5 per cent Ammonia, market quotations	18.00	17.50	17.00

PHOSPHORIC.

Double Super Phos., 45 per cent. Available Phosphoric Acid ...	45.00	44.50	44.00
High Grade Acid Phosphate, 16 per cent. Available Phosphoric Acid	16.00	16.50	15.00
Acid Phosphate 14 per cent. Available Phosphoric Acid....	14.00	15.50	13.00
Boneblack 17 per cent. Available Phosphoric Acid	25.00	24.50	24.00

MISCELLANEOUSL

H. G. Ground Tobacco Stems, 3 per cent. Ammonia, 9 per cent Potash	25.00	24.50	25.00
Pulverized Ground Tobacco Stems	16.00	15.00	15.00
Tobacco Dust, No. 1, 3 per cent. Ammonia, 2 K20 Potash......	21.00	20.50	20.00
Tobacco Dust, No. 2, 1½ per cent. Ammonia, 1½ per cent. Potash.	16.00	15.50	15.00
Dark Tobacco Stems, baled.....	16.00	15.50	15.00
Land plaster in sacks	10.50	10.25	10.00

Any formula will be mixed at the price of $1.25 per ton, in addition to the cost of the materials used.

FACTORS FOR CONVERSION.

To convert—

Ammonia into Nitrogen, multiply by	0.824
Nitrogen into ammonia, multiply by	1.214
Nitrate of soda into nitrogen, multiply by	16.47
Nitrogen, into protean by	6.25
Bone phosphate into phosphoric acid, multiply by	0.458
Phosphoric Acid into Bone Phosphate, multiply by	2.184
Muriate of Potash into actual potash, multiply by	0.632
Actual potash into muriate of potash, multiply by	1.583
Sulphate of potash into actual potash, multiply by	0.541
Actual potash into sulphate of potash, multiply by	1.583

Fort instance you buy 95 per cent. of nitrate of soda and want to know hom much nitrogent in it, multiply 95 per cent. by 16.47 you will get 15.65 per cent nitrogen; you want to know how much ammonia this Nitrogen is equivalent to, then multiply 15.65 per cent. by 1.214 and you get 18.99 per cent., the equivalent in ammonia.

CHEMICAL EQUIVALENTS.

Under the law and the regulations of the department chemical equivalents of the three essential elements, Ammonia, Available Phosphoric Acid, and Potash, are not allowed in the guarantee. A few instances have been noted, particularly in cotton seed meals, when the Ammonia is guaranteed, and followed by a statement of the protean contents:

As. Ammonia .... 5 per cent.
Protean .... 25.75 per cent.
Or Ammonia .... 8 per cent.
Protean .... 41.18 per cent.

Such a guarantee is misleading, as the terms "Ammonia" and "Protean," are equivalent, and only represent the "Nitrogen" (or ammonia) content of the goods.

Multiplying the nitrogen by 1.21 gives the ammonia thus, 3 per cent. nitrogen X1.21 gives ammonia 3.63 per cent. or nitrogen 3 per cent. X6.25 gives "Protean" 18.75 per cent.

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19		
Sulphate of Ammonia	21 to 24		
Dried Blood	12 to 17		
Concentrated Tankage	12 to 15	1 to 2	
Bone Tankage	6 to 9	10 to 15	
Dried Fish Scrap	8 to 11	6 to 8	
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	13 to 17	1½ to 2	

PHOSPHATE MATERIALS.

	Pounds per Hundred.		
	Ammonia	Avaiable Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphte			26 to 32
Florida Rock Pnosphate			33 to 35
Florida Super Phosphate		14 to 19	1 to 6
Grounded Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissolved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actual Potash	Am'nia	Phosphoric Acid	Lime
Muriate of Potash	50			
Sulphate of Potash	48 to 52			
Double Sul. of Pot. & Mag.	26 to 30			
Kainit	12 to 12½			
Sylvinit	16 to 20			
Cotton Seed Hu Ashes	15 to 30		to 9	10
Wood Ashes, unleached	2 to 8		to 2	30 to 25
Wood Ashes leached	1 to 2		to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4		3½
Cow Manure (fresh)	0.40	0 to 41	0.16	0.31
Horse Manure (fresh)	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)	0.67	1.00	0.23	0.33
Hog Manure (fresh)	0.60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.26	0.70

SPECIAL NOTICE.

The attention of persons sending samples of fertilizers for analysis is called to the following:

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER SAMPLES TO THE COMMISSIONER OF AGRICULTURE.

—SECTION 15 OF LAW.

Special samples of fertilizer sent in by purchasers, under Sec. 9 of the law approved May 22, 1901. Shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed and a FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICTLTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN OR BOTTLE, WILL BE ACCEPTED FOR ANALYSIS. This rule is adopted to secure fair samples of sufficient size to make the six necessary determinations, viz: Moisture, available and insoluble phosphoric acid, ammonia and potash; and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means, of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

COPIES OF THE FERTILIZER LAW.

Citizens interested in the fertilizer law of the State, and desiring to avail themselves of its protection, can obtain a copy free of charge by sending for sameto the Commissioner of Agriculture.

R. E. Rose, State Chemist. Marion G. Donk, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.
(Samples taken by purchaser).

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Special Mixture	473	.....	7.35	2.26	9.61	4.60	9.03	T. Kimball, St. Petersburg, Fla.
Fertilizer	474	.....	8.62	0.46	9.08	1.64	13.32	F. S. Hickock, Hastings, Fla.
Bone Compound (No. 1)..	476	19.00	9.75	2.67	12.42	2.20	1.62	John M. Calhoun, Marianna, Fla.
Acid Phosphate (No. 2)..	477	22.45	12.61	2.51	22.45	.....	.....	John M. Calhoun, Marianna, Fla.
Special Mixture	478	.....	6.08	0.76	6.84	4.36	7.86	R. D. Knight, Little River, Fla
Kentucky Brand—Pulverized Tobacco Stems....	479	.....	.....	.....	.....	2.89	10.14	Willson & Toomer Fert. Co., Jacksonville, Fla.
Cotton Seed Meal	480	.....	.....	.....	.....	7.02	.....	Schroeder & Auguinbaw, Quincy.
Fertilizer	481	14.25	4.90	0.32	5.22	3.57	12.99	J. F. Adams, Winter Park, Fla.
Sulphate of Potash	483	.....	.....	.....	.....	.....	50.48	Thos. W. Williams, Tampa, Fla.
Fertilizer	484	9.85	6.78	1.70	8.48	6.15	6.77	J. G. Powers, Terra Ceia, Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid			Ammonia.	Potash (K2O)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Sea Island Cotton Seed...	485	.....	.....	.....	.....	4.14	.....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	486	.....	.....	.....	.....	4.92	.....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	487	.....	.....	.....	.....	5.62	.....	Florida Mfg. Co., Madison, Fla.
Fertilizer	488	.....	5.20	0.77	5.97	1.86	13.15	H. O. Wordenhoff, Plant City, Fla
Fertilizer (light)	489	.....	7.56	1.59	9.15	4.65	7.61	Mrs. E. M. Lane, Delray, Fla.
Fertilizer (dark)	490	.....	6.12	0.66	6.78	4.28	7.24	Mrs. E. M. Lane, Delray, Fla.
Dried Blood	491	.....	.....	.....	.....	14.85	.....	J. T. Stanley, Jensen, Fla.
Raw Ground Bone	492	.....	9.53	13.98	23.50	4.50	.....	J. T. Stanley, Jensen, Fla.
Wood Ashes	493	.....	.....	.....	.....	.....	0.24	J. T. Stanley, Jensen, Fla.
Ground Tobacco Stems ..	494	.....	.....	.....	.....	3.18	9.23	J. T. Stanley, Jensen, Fla.
Cotton Seed Meal	495	.....	.....	.....	.....	7.75	....	Schroeder & Auguinbaw, Quincy.
Cotton Seed Meal	496	.....	.....	.....	.....	7.71	....	James B. Bours, Jacksonville, Fla
Acid Phosphate	497	.....	18.74	0.75	19.49	.....	.....	Goulding Fert. Co., Pensacola.
Fertilizer (acid phosphate)	498	14.40	13.64	0.53	14.17	0.00	0.09	J. D. Clark, Mt. Pleasant, Fla.
Fertilizer No. 1..........	499	11.30	7.05	1.01	8.06	4.60	8.42	B. G. Hewet, Pebble, Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid.			Ammonia	Potash (K20.)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Fetilizer No. 2	500	11.35	7.10	1.16	8.26	4.51	8.49	B. G. Hewet, Pebble, Fla.
Fertilizer	501	.....	0.00	0.00	0.00	4.42	0.00	Peter Gardener, Palatka, Fla.
Guano	502	.....	.....	.....	26|13	3.71	3.14	James Holmes, Jensen, Fla.
Acid Phosphate	503	.....	13.68	2.05	15.73	.....	.....	Prof. O. J. Moore, Lisbon, Fla.
Crude Carbonate of Potash	504	.....	.....	.....	.....	.....	38.85	J. Hirschburg, Tallahassee, Fla.
White Carbonate of Potash	505	.....	.....	.....	.....	.....	62.62	J. Hirschburg, Tallahassee, Fla.
Fertilizer	506	10.85	7.30	1.26	8.56	3.18	3.52	W. M. Girardeau, Monticello, Fla.
Fertilizer	507	.....	9.71	1.56	11.27	5.36	7.68	P. L. Fiveash, Alliance, Fla.
Fertilizer	508	7.35	8.12	1.20	9.32	4.01	8.71	C. B. Robbinson, Corno, Fla.
Cotton Seed Meal	509	.....	.....	.....	.....	7.13	.....	J. E. Wirick, Jr., Lloyd, Fla.
Fertilizer	510	.....	6.10	5.57	11.67	2.08	8.46	R. L. McMullen, Clearwater, Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	511	10.45	9.99	1.96	8.95	4.63	4.86	Johnson & Co., Leesburg, Fla.
Fertilizer No. 1..........	512	9.10	7.87	0.73	8.60	2.24	1.28	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 2..........	513	1 .15	9.11	3.00	12.11	2.12	1.84	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 3..........	514	10.10	8.43	2.68	11.11	2.13	2.15	J. W. McKeown Co., Concord, Fla.
Ferilizer No. 4..........	514	11.30	10.52	3.26	13.78	2.47	1.89	J. W. McKeown Co., Concord, Fla.
Blood, Bone and Potash..	516	14.20	9.91	2.95	9.86	3.80	4.44	J. H. Dishong, Dover, Fla.
Dark Cotton Seed Meal and Potash	518	.25	.....	.....	2.03	5.02	3.81	R. L. Goodwin, St. Pierce, Fla.
Ground Tobacco Stems ..	519	.....	.....	.....	.....	2.92	9.24	Armour Fertilizer Works, Jacksonville, Fla.
Fertilizer	520	14.61	7.75	2.76	10.51	2.29	2.23	J. H. Hinton, Dover, Fla.
Fertilizer No. 3	521	6.95	8.49	1.95	10.44	2.15	13.71	E. J. Yates, Lakeland, Fla.
Fertilizer No. 2	522	10.95	7.22	1.39	8.61	4.46	8.07	E. J. Yates, Lakeland, Fla.
Fertilizer No. 1..........	523	14.25	8.17	3.02	11.19	2.22	2.26	E. J. Yates, Lakeland, Fla.
Fertilizer	524	9.25	8.03	0.72	8.75	4.44	11.44	H. Price Williams, Miami, Fla.
Rock Phosphate	525	.....	.....	.....	37.16	.....	.....	T. D. Hawkins, King's Ferry, Fla.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	526	10.90	7.74	2.96	10.70	4.87	13.79	S. B. Robbinson, Seven Oaks, Fla.
Armour's H. G. Tobacco. Dust	527	....	.....	.....	.....	2.60	3.91	Armour Fert. Wks., Jacksonville.
Fertilizer	528	14.00	5.61	3.01	8.61	4.43	5.65	H. J. Drane, Lakeland, Fla.
Fertilizer	529	10.20	7.12	3.00	10.12	4.37	15.56	F. G. Sampson, Boardman, Fla.
Dark Cotton Seed Meal...	530	....	.....	.....	1.94	4.99	1.49	N. H. Fogg, Altamonte Springs.
Bright Cotton Seed Meal.	531	....	.....	.....	2.91	8.37	1.81	N. H. Fogg, Altamonte Springs.
Rock Phosphate..	532	....	.....	.....	34.05	.....	.....	John S. Flanagan, San Antonia.
Ashes	533	....	.....	.....	.....	.....	0.60	A. J. Rosetter, Enterprise, Fla.
Fertilizer	534	....	1.63	0.77	2.40	4.00	7.08	W. J. Dyer, Stuart, Fla.
Fertilizer No. 1.........	535	....	6.08	0.85	6.93	4.20	9.34	A. P. DeWolf, Crescent City.
Fertilizer No. 2 (Sulphate Potash).	536	....	.....	.....	.....	.....	47 24	A. P. DeWolf, Crescent City.
Fertilizer	537	....	9.72	3.12	12.84	2.00	1.69	L. A. Adams, Luanna, Fla.
Fertilizer	538	....	7.22	4.12	11.34	2.25	2.37	R. L. West, Plant City, Fla.
Rock Phosphate	539	....	.....	.....	33.46	.....	.....	John D. Philips, Bailey, Fla.

BUREAU OF FERTILIZERS—Continued.

NAME OF BRAND.	Laboratory No	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	540	....	5.23	1.38	6.66	3.48	7.84	S. P. Lamb, Anthony, Fla.
Cotton Seed Meal........	541	....	.....	.....	2.29	6.78	1.71	J. E. Snow, East Lake, Fla.
Tobacco Ashes	542	....	.....	.....	2.53	.....	12.12	James Holmes, Jensen, Fla.
Muck Soil	543	....	.....	.....	0.39	1.61	Tr.	W. Lippencott, Lakeland, Fla.
Fertilizer	544	....	7.60	9.05	15.05	3.41	12.36	L. C. Hefner, St. Petersburg, Fla.
Cotton Seed Meal	546	....	.....	.....	.....	6.84	.....	Lewis Lively, Tallahassee, Fla.

For values see heading "Bureau of Fertilizers."

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample" sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on following pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a "Special Sample."

DEPARTMENT OF AGRICULTURE, DIVISION OF CHEMISTRY.

R. E. ROSE, STATE CHEMIST, ANALYSIS OF FERTILIZERS, 1904, MARION G. DONK, ASSISTANT CHEMIST.

Samples taken by State Chemist under Section 1, Act approved May 22, 1901.

NAME OF BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Cotton Seed Meal	311	**Guarant'd Analysis.**	......	......	......	......	7.35	......	Southern Cotton Oil Co., Washington, Ga.
		Official Analysis....	......	....	...	......	8.12	......	
Tobacco Dust	312	**Guarant'd Analysis.**	......	......	......	......	1.20	2.50	Tampa Fert Co, Tampa, Fla.
		Official Analysis....	......	......	......	......	1.38	2.80	
Hard Wood Ashes	313	**Guarant'd Analysis.**	......	......	......	......	......	5.50	Blackshear Manufa'g Co., Blackshear, Ga.
		Official Analysis....	......	......	......	......	......	4.60	
H. G. Dissolved Bone Black	314	**Guarant'd Analysis.**	10.00	16.00	......	......	......	......	Armour Fert. Co., Jacksonville.
		Official Analysis....	11.30	20.26	0.29	20.55	......	......	
Acid Phosphate	315	**Guarant'd Analysis.**	......	14.00	......	......	......	......	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	13.90	13.76	0.35	13.90	......	......	

Steamed Bone Flour....	316	**Guarant'd Analysis.**	......	......	......	23.00	3.00	......	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	5.75	13.38	13.46	26.84	3.85	......	
H. G Vegetable Manure.	317	**Guarant'd Analysis.**	10 00	5 00	2 00	.....	4 00	6 00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	12 10	7 64	2 05	9 69	4 16	5 98	
Fruit and Vine Manure.	318	**Guarant'd Analysis.**	8 00	6 00	1 00	......	2 00	12 00	Tampa Fert. Co , Tampa, Fla.
		Official Analysis....	8 95	8 31	0 64	8 95	2 42	11 09	
Ober's Fruit and Vine..	319	**Guarant'd Analysis.**	11 00	6 00	2 00	......	2 50	10 00	Ober & Sons, Baltimore, Md.
		Official Analysis....	6 95	8 93	1 54	10 47	3 27	9 36	
Ober's Vegetable Manure..................	320	**Guarant'd Analysis.**	14 00	6 00	1 00	......	5 00	6 00	Ober & Sons, Baltimore, Md.
		Official Analysis....	13 70	7 87	1 78	9 65	5 43	5 96	
Baugh's Special Orange Tree..................	321	**Guarant'd Analysis.**	12 00	5 00	2 00	......	2 00	10 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	6 20	8 18	1 97	10 15	2 39	9 69	
Baugh's Vegetable Manure..................	322	**Guarant'd Analysis.**	12 00	6 00	4 00	......	5 00	7 00	Baugh & Sons, Baltimore; Md.
		Official Analysis....	13 35	6 71	1 71	8 42	5 48	6-88	
Double Strength of Potash..................	323	**Guarant'd Analysis.**	10 00	5 00	2 00	......	1 50	10 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7 55	6 65	1 09	7 74	2 05	11 40	
Peruvian and Fish Guano............... ..	324	**Guarant'd Analysis.**	10 00	5 00	1 00	......	4 50	5 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	8 35	6 22	2 44	8 66	4 92	6 58	
Potato Mixture.........	325	**Guarant'd Analysis.**	10 00	5 00	2 00	......	3 00	9 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7 90	4 99	2 53	7 52	3 79	8 23	

Peruvian & Fish Guano Double strength of Potasq	326	Guarant'd Analysis.	......	5.00	1.00	......	4.50	10.00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7.00	6.35	4.65	11.00	4.09	9.56	
Orange Tree Fertilizer	327	Guarant'd Analysis.	9 00	5 00	2 00	......	3 00	10 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis...	5 20	5 62	1 83	7 45	3 74	10 78	
Vegetable Fertiliz'r No 1	328	Guarant'd Analysis.	8 00	4 00	2 00	.....	4 50	5 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	8 80	3 95	2 76	6 71	4 41	6 04	
Fish and Potash	329	Guarant'd Analysis.	9 00	3 00	2 00	......	6 00	5 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	9 90	3 19	1 29	4 48	6 35	6 66	
Bean Special	330	Guarant'd Analysis.	8 00	4 00	3 00	......	3 50	8 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	4 90	4 24	3 04	7 28	4 61	7 85	
Cuke Special	331	Guarant'd Analysis.	9 00	3 50	2 00	......	4 00	8 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	4 75	3 15	2 21	5 36	4 24	8 52	
Early Trucker	332	Guarant'd Analysis.	7 00	4 00	2 00	.....	5 00	5 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	6 80	3 52	1 98	5 50	5 43	5 09	
Lettuce Special	333	Guarant'd Analysis.	9 00	4 00	2 00	......	6 00	6 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	4 95	4 74	2 81	7 28	6 06	6 99	
Strawberry Special Fertilizer	334	Guarant'd Analysis.	8 00	6·00	......	......	3 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	9 80	5 91	2 22	8 13	3 98	5 14	

Champion Citrus Compound	335	Guarant'd Analysis.	10 00	6 00	......	......	3 00	14 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 25	5 86	0 93	6 77	4 03	11 50	
Old Dominion Potato Manure	336	Guarant'd Analysis.	8 00	7 00	.....	......	5 00	8 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	14 50	5 37	1 16	6 51	5 09	8 42	
Special Vegetable Grower	337	Guarant'd Analysis.	8 00	8 00	.....	......	3 00	3 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 12	8 28	1 80	10 08	3 01	3 06	
Tiptop Tomato Trucker.	338	Guarant'd Analysis.	8 00	7 00	......	.....	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 55	7 23	1 70	8 93	4 59	5 16	
Fruit and Vine.........	339	Guarant'd Analysis.	8 00	6 00	...	......	2 50	10 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 35	5 88	1 03	6 91	3 09	9 81	
Southern States Special.	340	Guarant'd Analysis.	......	6 00	......	......	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 65	8 49	1 53	10 02	3 59	5 98	
Cotton Seed Meal	341	Guarant'd Analysis.	....	......	......	2 50	8 00	1 50	Southern Cotton Oil Co., Pensacola.
		Official Analysis...	....	....	......	......	8 68	......	
Sterns Ammoniated Raw Bone	342	Guarant'd Analysis.	15 00	8 00	1 00	......	2 00	2 00	Standard Guano & Chem. M'f'g. Co., New Orleans.
		Official Analysis....	15 75	9 47	2 06	11 53	2 10	1 48	
Baltimore Soluable Bone	343	Guarant'd Analysis.	15 00	10 00	1 00	......	1 00	1 00	Georgia Chemical Co., Augusta, Ga.
		Official Analysis....	14 95	10 32	3 70	14 11	1 47	1 11	
Cumberland Standard Fertilizers	344	Guarant'd Analysis.	14 00	8 00	1 00	......	2 00	2 00	Mutual Fertilizer Co., Savannah.
		Official Analysis....	13 40	8 65	0 53	9 17	1 98	1 97	

Scotts H. G. Acfd Phosphate	345	Guarant'd Analysis.	12 00	14 00	2 00	.....	......	......	Va.-Car. Chem. Co., Montgomery, Ala.
		Official Analysis....	14 00	15 27	1 84	17 11	......	......	
Champion Farmers' Choice	346	Guarant'd Analysis.	15 00	8 00	1 00	.....	2 00	2 00	Standard Guano & Chem. M'f'g. Co., New Or eans.
		Official Analysis....	11 70	9 35	1 25	10 63	2 37	2 77	
Vegetable Compound	347	Guarant'd Analysis.	16 00	7 00	1 00	......	4 00	4 00	Goulding Fertilizer Co., Pensaco'a.
		Official Analysis....	14 05	9 82	1 93	11 75	2 51	4 52	
Baltimore Soluble Bone	348	Guarant'd Analysis.	15 00	10 00	1 00	......	1 00	1 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	13 75	10 06	2 03	12 14	0 84	0 93	
Bone and Potash	349	Guarant'd Analysis.	15 00	10 00	1 00	......	......	2 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	12 30	10 82	2 57	13 39	......	1 84	
H G. Acid Phosphate	350	Guarant'd Analysis.	16 00	15 00	1 00	.....	......	......	Goulding Fertilizer Co., Pensaco'a, Fla.
		Official Analysis....	13 20	16 92	0 43	17 35	......	......	
Hard Wood Ashes	351	Guarant'd Analysis.	......	......	....	......	......	5 50	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	.....	......	......	.....	......	5 06	
H. G. Sulphate f Potash	352	Guarant'd Analysis.	......	......	......	......	......	50 00	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	.....	......	......	......	......	50 28	
Acid Phosphat	353	Guarant'd Analysis.	....	14 00	......	.....	......	......	W. R. Fu'ler & Co., Tampa, Fla.
		Official Analysis....	14 25	14 75	1 02	15 47	......	......	
Sulphate of Ammonia	354	Guarant'd Analysis.	......	....	......	......	24 00	......	Manatee Fertilizer Co., Palmetto, Fla.
		Official Analysis....	......	......	......	......	25 09	......	

Vegetable Fertilizer.....	355	Guarant'd Analysis.	10.00	5.00	2.00	......	4.00	6 00	W. R. Fuller Co., Tampa,
		Official Analysis....	12 40	5 48	2 76	8.24	4 18	7 05	Fla.
Fruit and Vine No. 1....	356	Guarant'd Analysis.	8 00	6 00	1 00	......	2 00	12 00	Baugh & Sons, Baltimore,
		Official Analysis....	8 70	7 13	2 51	9 64	2 97	12 38	Md.
H. G. Sulphate of Potash	357	Guarant'd Analysis.	......	....	......	......	......	49 00	W. R. Fuller Co., Tampa,
		Official Analysis....	......	......	......	......	....	49 08	Fla.
Fruit and Vine..........	358	Guarant'd Analysis.	8 00	6 00	1 00	......	2 00	12 00	W. R. Fuller Co., Tampa,
		Official Analysis....	10 20	6 96	2 26	9 22	2 29	11 88	Fla.
Baugh's Vegetable Manure..................	359	Guarant'd Analysis.	12 00	6 00	4 00	......	5 00	7 00	Baugh & Sons, Baltimore,
		Official Analysis....	9 85	7 62	1 45	9 07	4 91	7 60	Md.
Dissolved Bone Black...	360	Guarant'd Analysis.	....	17 00	......	......	......	......	Baugh & Sons, Baltimore,
		Official Analysis....	7 50	18 26	3 74	22 00	......	......	Md.
H. G. Vegetable Fish Guano...............	361	Guarant'd Analysis.	12 00	5 00	2 00	......	4 00	8 00	Baugh & Sons, Baltimore,
		Official Analysis....	9 15	5 13	3 22	8 35	4 00	7 05	Md.
Acid Phosphate.........	362	Guarant'd Analysis.	......	14 00	......		......	......	Manatee Fert. Co., Palmetto, Fla.
		Official Analysis....	9 35	15 47	2 34	17 81	......	......	
Blood and Bone.........	363	Guarant'd Analysis.	......	6 00	8 00	......	6 50	.....	W. R. Fuller Co., Tampa,
		Official Analysis....	10 00	5 71	9 79	15 50	6 58	......	Fla.
Blood Bone and Potash.	364	Guarant'd Analysis.	8 00	6 00	3 00	......	4 00	4 00	W. R. Fuller Co., Tampa,
		Official Analysis....	10 90	6 26	3 17	9 43	3 93	4 20	Fla.

Orange Tree Special.....	365	Guarant'd Analysis.	12 00	6 00	2 00	......	2 50	12 00	Manatee Fert. Co., Palti-
		Official Analysis....	7 80	7 57	0 38	7 95	2 27	13 65	more, Md.
Dark Cotton Seed Meal	365	Guarant'd Analysis.	12 00	......	....	......	5 00	......	Florida Mn'fg Co., Madi-
		Official Analysis ...	......	......	......	......	4 89	.....	son, Fla.
H. G. Sulphate of Potash	367	Guarant'd Analysis.	......	.....	...	......	......	49 00	Manatee Fert. Co., Pal-
		Official Analysis....	......	......	......	......	......	49 72	metto, Fla.
L. G. Sulphate of Potash	368	Guarant'd Analysis.	.....	......	......	......	......	27 00	Manatee Fert. Co., Pal-
		Official Analysis....	.....	....	...	......	......	25 86	metto, F a

PART IV.

MISCELLANEOUS.

ADDRESS BY R. E. ROSE STATE CHEMIST, READ AT THE SECOND ANNUAL CONVENTION OF THE INTER-STATE CANE GROWERS CONVENTION, JACKSONVILLÆ, MAY 4-6-1904.

The Culture of Sugar Cane, and Manufacture of Sugar, in the Gulf States—Commercially Concluded

Mr. President, Ladies and Gentlemen: After listening to the addresses of those gentlemen preceding me, who have so positively demonstrated the amount and quantity of sugarcane grown per acre throughout the Gulf States, and the cost to produce it, with the testimony of such men as Dr. H. W. Wiley, Prof. William C. Stubbs and others, as to the sugar content of the plant with the practical experience of men like Messrs. W. B. Roddenberry, C. K. McQuarrie and John Thomas Porter as to the cost of culture and yield per acre, it would be presumptuous for me to attempt to add to this feature of the duscussion.

I have for many years maintained that it was only necessary to ascertain these facts, as they exist and have been stated here, of the cost to produce the cane, the yield per acre in sugar and to publish them authoritatively, to induce an enormous development in the commercial production of sugar in the Gulf States. In this connection I beg to repeat part of my remarks made to this association at Macon last year.

"The American people are the greatest consumers of sugar in the world. Our market for foreign sugar is acknowledged to be the best known.

SUGAR IMPORTED.

"We import annually practically 4,000,000,000 pounds, or 2,000,000 tons (excluding the sugar imported from our island possessions), of which 1,600,000 tons is raw, or unrefined cane sugar, and 389,000 tons refined beet sugar.

"The importation of strictly foreign sugar for 1901-1902 was 3,975,000,000 pounds.

"From the American colonies, Porto Rico, Hawaii and the Philippines, 838,000,000 pounds. Total imports including the colonies, 4,813,000,000 pounds, or 2,406,500 tons. We produced in the States of beets, 163,126 tons. Of sugarcane in Louisiana, 275,000 tons. A total consumption in the United States proper of 2,844,626 tons.

"Recently the production of American sugar has been very largely increased by the establishment of the beet sugar industries in the West and Northwest, and by the annexation of our island colonies, Hawaii, Porto Rico and the Philippines; still with this enormous increase in the American production we produce but thirty per cent. of the sugar consumed within the United States proper. While on this subject I wish to call your attention to the fact that with the exception of 389,000 tons of beet sugar from Germany, and 163,000 tons of Western beet sugar. this vast amount is cane sugar only. The total cane sugar produced in the world is 3,775,000 tons, of which the United States consumes 2,192,000 tons, not quite two-thirds of the entire cane sugar production of the world. The increase in beet sugar production during the last twenty years under the fostering care of Germany, Austria, France and our own Government, has been phenomenal. Today two-thirds of the world's sugar is produced from beets. While beet culture has had the intelligent fostering care of our own, and the various European Government bounties, rebates, tariffs and drawbacks, cane sugar has had neither, on the contrary, legislation has always been adverse to cane sugar in our own country and in England, the two largest sugar consumers in the world.

BEET CULTURE.

"Scientists and trained agriculturists, men eminent in their professions, have been retained in the interest of beet culture, to breed up a plant from six to fourteen per cent. sugar content. Vast sums have been expended in this and other countries to promote the industry with wonderful results. Until very recently no intelligent effort to improve the quality of tropical cane, nor methods of manufacturing cane sugar has been made. No effort was made to encourage or educate the cane grower, to improve his methods, decrease his cost of culture and manufacture. Recently, I am glad to say, the Louisiana Sugar Planters' Association, at their own expense, established a sugar experimental station, and placed a competent man in charge—a practical man, as well as a most eminent scientist. The results have justified their faith, and the Louisiana sugar planters have reaped a rich reward for their investment. The improved methods of culture, fertilizing and manufacture, to say nothing of the improvement in cane, has repaid them many fold. I am pleased to say that our general Government and the State of Louisiana now contribute liberally to the support of the station.

"That cane sugar can be produced in the cane belt of the South for less cost than beet sugar in the West, or in Europe, can certainly be proven I believe that but a small part of the sum expended in the effort to establish the beet sugar in America, intelligently used—not in experiments—we have passed that stage years ago—but in demonstration of the facts as to cost of production and manufacture, would have long since made America the principal sugar producer of the world."

NEW ERA HAS ARRIVED.

Mr. President, I believe the time so long hoped for by yourself and your associates has come, that a new era in the history of cane sugar production in America is upon us. When I note the interest shown by the head of the United States Agricultural Department, that eminently practical farmer, broad-minded agriculturist, and far-seeing statesman, the Hon. James Wilson, Secretary of Agriculture; Dr. H. W. Wiley, chief of the Chemical Bureau of the Agricultural Department, and Prof. W. C. Stubbs, director of the Louisiana Sugar Experiment Stations, and remember that they were with us at our first meeting in Macon, I feel that the long period of waiting for recognition of the intrinsic value of this peculiarly Southern production has passed, and that the sugar-cane of the Gulf States will now receive that careful, scientific care and culture and official recognition of its value, that has so long been given to its humble relative the beet, which has for years enjoyed the protective care of our own and European Governments, and had the consideration of the most eminent scientists, agriculturists and statesmen of both continents to assist in its development. Now that cane has attracted the attention of statesmen, scientists and business men, I have no fear of the result.

Though the beet has been wonderfully developed, and the business has grown to enormous proportions, I believe that recent results in cane culture justify me in predicting a far greater development in cane culture. That sugarcane is susceptible of vast improvement, by careful selection and intelligent culture, has always been my contention, though in its natural state it has always been, and is now, superior to the most improved varieties of beets for sugar making.

RESULTS IN LOUISIANA.

Recent results in Louisiana under the practical and scientific direction of Dr. Stubbs, have demonstrated the correctness of these claims made by myself, that, with less cost and labor, and in far shorter time, greater improvements could be expected from intelligent efforts to improve a natural sugar plant than one not originally a true sugar producer. The results of the work at the Louisiana Sugar Experiment Station, covering a period of only ten years, in cane breeding and selection, have recently been published.

In an interview with the New Orleans Times-Democrat Professor Stubbs says:

"Six years ago we received a large number of various We tried to ascertain which cane was best adapted for this climate. We made a score or more experiments and carefully compared the results. We wanted to get a cane that would find ready and congenial growth here in Lousiana, and that would at the same time increase the sugar output for the acreage in this State.

"I am delighted to say that our patience has at length been rewarded. We now have two kinds of cane that are highly successful. They are unquestionably a great deal more satisfactory than the best cane known here for many years. In my opinion they are the most valuable canes that can be grown in Louisiana soil. They make what our agricultural experts call an ideal specimen. We have classified them as 'D 95' and 'D 74'.

"To the lay public there is nothing exceedingly significant in those words 'D 74,' but to the sugar planter they will be nothing less than startling. This cane produces thirty-eight tons to the acre. The juice yields 16 per cent. of sugar. Under a nine-roller mill 81 per cent. is obtained without saturation.

"If you will compare these figures with statistics of cane now grown you will realize that this new cane will revolutionize the sugar industry in Louisiana The old cane gives an acreage of thirty to thirty-one tons, with a 12 pe rcent. yield in the juice. Under the roller it gives a percentage of 71.

"The new cane is long-jointed, green, perfectly healthy and beautiful in appearance. It has an excellent stubble, and remarkable vigor. It withstood the terrific gale that swept over the city on September 9 and 10. It is deep-rooted and strong, and was the only cane in the field that was not blown either flat or partly down to the ground. It was not damaged the least bit by the storm.

"We are ready and willing to furnish this cane to any planter who may apply for it. We expect to send out more than 500 bundles in the next few weeks. Requests for the cane are coming in on every mail. We shall begin to ship the cane in a few days. Planters throughout the State show intense interest and have strong faith in the specimens. Next week we shall send some of the cane to the experiment stations in Cuba and the Hawaiian islands."

In the Louisiana Planter and Sugar Manufacturer of February 20 appears the report of Prof. R. E. Blouin, assistant director of the Louisiana Sugar Experiment Station, of the results of this work in the development and distribution of these two seedling canes, selected from hundreds of seedlings with which they have experimented; not only the results obtained at the station, scientifically and experimentally, but the field results of numbers of our foremost sugar planters who have cultivated these canes on a commercial scale under ordinary field conditions.

These results are truly phenomenal, and prove beyond cavil the truth of the assumption that the tonnage and sugar content of the cane plant can, and has been, increased in as great a ratio as ever the beet has, and that the continued strife for excellence will give us a plant as far superior to the original cane plant as commonly grown as the sugar beet of the present day is to the original type This report is of too great length to be quoted here. All those interested should procure the report and study it. I simply summarize the results as given by Prof. Blouin, and follow his figures to the final results. He says: "The canes are known as 'D 74' and 'D 95,' and have been under culture at the station some ten years, and throughout Louisiana but a few years." The summary of the report, taking a field of 500 acres as a basis of comparison, the field to consist of 250 acres of plant cane, and 250 acres of first year's stubble, and comparing it with an equal area of domestic or home cane, under similar conditions of age and culture, is as follows:

Five hundred acres seedling canes D 74, compared to 500 acres of domestic or home canes:

D 74, tons of cane 18,187, averaging 36.33 tons per acre; home cane, tons of cane 15,020, averaging 30 tons per acre; increase, 3,167, averaging 6.33 tons per acre.

D 74, pounds of sugar, 3,203,875, averaging 6,407.75 per acre; home cane, pounds of sugar, 2,234,546, averaging 4,469.09 per acre; increase, 969,329, averaging 1,938.66 per acre.

D 74, value at 3½ cents $112,135.63, average $224.27 per acre; home cane, value at 3½ cents, $78,212.44, average, $156.42 per acre; increase, $33,922.19, average $67.85 per acre.

Average increase in tonnage, 20 per cent; average increase in sugar, 43 per cent; average increase in value, 43 per cent.

SUPERIOR SUGAR PRODUCED.

This gentleman should dispose of the plant, its tonnage and sugar content, and show to the world that we have a plant now the superior of all others for sugar production; with a soil and climate eminently adapted to its culture; in fact, its natural soil; a plant that will doubtless be much improved by further work along the lines pursued by Dr. Stubbs, with the assistance of the Department of Agriculture, which I feel assured will be heartily given. This question—the agricultural question—is certainly disposed of.

The manufacture of sugar, commercially and profitably: Here I fear I shall cause a vigorous protest on the part of the sirupmakers present. While I do not discredit the sirup business, and know there will always "be room at the top," that many will succeed in making large returns from their cane fields and sirup factories I maintain that until we produce commercially, scientifically, and economically, a pure granulated or crystalized sugar, as do our friends, the beet-sugar manufacturers, we will not become a factor in furnishing the sugar of America.

The American consumer demands, and will accept nothing but a pure white sugar. The price does not come into the calculation at all. It is well enough to say we like, or even prefer, a nice "yellow, clarified" sugar, or a raw sugar, better than a pure white; the facts are we don't use it. We can today purchase first-class, 96-per cent centrifugal sugar at 3 cents per pound; still, we pay 4– to 4½ cents for the same sugar with but a trace of coloring matter and the four pounds of water removed.

A carload of choice, pure, open-kettle, or 96-per-cent centrifugal sugar, could not be readily sold in Jacksonville today to the trade, while tons of granulated, or pure sugar, would find a ready sale. We should be willing to recognize this fact, as has the American Sugar Refining Company, the so-called trust. They simply understand the American demand and meet it. They buy raw sugar (or sirup) for as small a price as they can procure it, be it of foreign or domestic production, properly refine or clean it, and sell it to the American public for the highest price they can obtain: This is not peculiar to the sugar refiner. It is the business of all manufacturers to buy cheap raw materials, and sell the finished product at a profit. This applies to all raw products, particularly agricultural products: hides, wool, beef, pork, cotton, tobacco, or wheat. The commercial value of sirup, or raw sugar, depends solely on its sugar contents, and is fixed by the refiner, hence to produce large quantities of raw sugar or sirup would be simply to cheapen the cost of raw material to the refiner, and by no means affect the price of refined (or clean) goods, to the American public.

I have no reason to change my opinion; that the only method to produce sugar, commercially, economically, and profitably, is to establish central factories at convenient points, equipped with the latest and most improved apparatus of large capacity; the grower selling his cane direct to the factory at an agreed price per ton, based on the market value of pure sugar and the sugar content of the cane. This is the only way by which the sugar industry can be made profitable and successful, the same system as is employed in all sugar growing countries, and universally adopted by the beet-sugar manufacturer.

I do not desire to discourage the manufacture of first-class sirups. There will always be a demand for a really first-class table sirup, well made, and neatly packed, in convenient packages. However, the majority of our farmers have neither the means, nor the skill, required to produce such an article, and must expect to dispose of his crop to the central factory (or refinery), either as cane or sirup. If he makes his crop into sirup, by the ordinary process, just one-half the sugar will be lost in the milling and manufacture, and he will be paid for but one-half of his crop, after he has grown it, hauled it to his factory, and made it into sirup or raw sugar; in fact, less than half, as the cost of manufacture, and packages, will have to be deducted from the prpice he receives. In other words, a ton of cane is worth more at a central factory, well-equipped and modern in its construction, than the sirup the average farmer will obtain from the same ton of cane by the ordinary methods now used in milling and manufacture. To illustrate: The juice of average, well-ripened cane required to produce one gallon of good sirup, say 40 degrees Beaume, cold, will, under proper conditions, make eight or more pounds of pure sugar; if first made into sirup, under ordinary conditions, it will yield not more than four pounds of pure sugar, particularly if it be what is known as good sirup, "thick and not liable to crystalize." I cannot better express my position than to repeat statements made by myself in this city in 1900.

MODERN METHODS.

The sugar-planter and manufacturer will soon discover that by using modern methods, late improvements in manipulation, with economical and labor-saving devices, he can for less cost make more refined sugar from his cane than he could formerly make of raw sugar, and sell it direct to the consumer at prices 25 to 30 per cent. more than he can now get for his raw product delivered at a refinery. The facts are that a modern central mill can take the cane direct from the farmer, and, by a no-means expensive or difficult process, thoroughly purify the juice, and make a standard article of granulater sugar, ready for the table, equal to any, at a less cost than can the farmer make a brown sugar, with his crude and wasteful apparatus and methods. At the same time this modern, central mill will double the output of granulated sugar from each ton of cane, as compared to the output of the open-kettle or steam train. The beet sugar manufacturer has recognized this fact, and uses none but the latest-improved apparatus, and makes none but refined sugar. He is independent of the refiner, and sells direct to the trade.

Louisiana is rapidly learning this lesson and is now building numerous central mills, or refineries, to make refined sugar only, direct from the cane.

SUPERIOR CLIMATE AND SOIL.

When the South, with her superior climate and soil, builds central mills, or factories, she can make at a profit in spite of free raw sugar from Cuba, as she will have the assistance of the sugar trust and the beet-sugar grower in maintaining the price of refined sugar. In other words, there is a large profit in manufacturing a finished article (vide, the sugar trust), while a raw product finds slow sale at reduced prices.

The South can make more refined sugar direct from her cane, for less cost per pound, than she at present makes raw sugar; she can increase the yield fully 50 per cent. per ton of cane over present conditions, and increase the value per pound fully 30 per cent. This is but a matter of education—when our farmers begin to think, and then combine their practical knowledge and labor with capital and skill, now seeking profitable employment, the question of the American supply of sugar will be solved by the cane belt of the United States, making the necessary amount to supply the demand. The beet-grower will soon discover that he cannot compete with cane, and will naturally gravitate into the cane belt, where his profits will be greater, and his crops more certain.

COST OF FACTORY.

A factory to turn out 50,000 pounds of granulated sugar per day can be erected for $75,000. Allowing the raw material (cane or sirup) to cost 50 per cent. of the selling price of sugar, 50,000 pounds will pay the grower $1,125; cost of manufacture (75 cents per 100 pounds), $375; net profits of factory per day, $750; gross daily proceeds, $2,250. These figures are based on present prices of sugar—i. e., 4½ cents for standard granulated. The factory should run one hundred days, showing a net profit of $75,000 per season. Such a factory will require 300 tons of cane (or its equivalent in sirup), per day, and will consume the product of some 1,500 acres of average Florida cane, paying the growers $112,500 for the season. There is not a town or village in the State, from Pensacola to Jacksonville, or from Jacksonville to Tampa or Miami, that cannot furnish within a short distance twice the required acreage for such a mill. A thousand such mills would be required to produce the 5,000,000,000 pounds imported annually.

The modern factory will make 175 pounds granulated sugar per ton of cane, pay the farmer $4 per ton, and net the factory $2.50 per ton of cane. The product of the modern house will find a ready sale wherever offered. The open-house sugar can only be sold to a refinery, as the American public will use none but the best granulated sugar. A mill handling from 400 to 800 tons of cane per day requires no greater number of skilled employees, engineers, sugarmakers, etc., uses little fuel, the wast of house is reduced to a minimum, the extraction is practically perfect (80 to 82 per cent.), practically no labor is required after the cane is placed on the carrier, the product is ready for immediate consumption. Such a house should make none but granulated sugars, at a cost not to exceed that of crude sugar or sirup, with a much greater yield. These mills or factories, purchasing their supplies from the farmer, can afford to pay for the cane delivered, a price, equal to the sum now obtained for his crude sirup, now made in a crude and wasteful manner, saving the farmer the annoyance and cost of manufacture and packages, and at the same time make large profits on the capital invested.

I advocate the central mill plan, purchasing cane from the farmers, that the best results may be had both in the field, and in the factory, the farmer devoting his time and skill and labor to producing the largest possible crop of high-grade cane, the miller, to the most economical methods of making the best sugar, each receiving the greatest reward possible for his skill in his particular line.

CONSERVATIVE FIGURES.

I believe the foregoing figures are conservative, based on average conditions as they now prevail; that these profits can be largely increased by the intelligent cooperation of the Agricultural Department and experiment stations working along the lines, and following the lead, of the Louisiana Sugar Experiment Station, in the development of the plant, and improvement in methods of manufacture.

That the sugarcane will in the near future replace the beet as the most economical source of sugar I have no doubt. I am convinced that only the apathy, and false security, left by the cane grower. his neglect of scientific and economical methods, together with the careful, economical and aggressive methods of the beet grower, backed by Government aid and encouragement, in this and European countries. has temporarily increased the world's supply of beet sugar, as compared to cane sugar.

That the cane belt of the South can, under the same intelligent system of culture and manufacture, produce pure sugar at a profit when selling at a price less than the cost of producing beet sugar, under the most favorable conditions. I believe can. and will, be demonstrated in the near future, and that the American cane grower will supply not only the enormous home demand, but a large part of the foreign consumption.

That others besides myself are of this same opinion is best evidenced by this gathering of representative farmers, cane growers, and business men of the New South; from the Brazos to the St. Johns; from California to the keys; this gathering certainly shows that the cane grower of the South has awakened to the possibilities of the profitable commercial production of sugar in the cane belt of America.

RESOLUTIONS ADOPTED BY THE INTER-STATE CANE GROWERS CONVENTION AT JACKSONVILLE MAY 5, 1904.

BY R. E. ROSE.

"Whereas, Prompt, efficient and speedy transportation of cane from the field to the factories at reasonable uniform rates of freight are prime necessities for the successful establishing of the sugar industry in the Gulf States; therefore, be it

"Resolved, That the various transportation companies and tariff associations throughout the cane producing States, and the various Railroad Commissions of the several States represented, be required to establish and put into effect similar rates as now fixed by the Louisiana authorities, and that the officers of this association be authorized to take such steps as may be best adapted to secure such rates, and have the same put in effect."

BY DR. E. M. SPENCE.

"Whereas, It is highly important to the best interests of both the producers and consumers of cane sirup, that all the Southern States enact laws providing against the sale of adulterated sirups branded as pure articles; therefore, be it

"Resolved by this convention, That the General Assembly of the State of Florida is hereby earnestly petitioned to enact into law a measure for the protection of manufacture and sale of pure sugarcane sirup in that State on lines similar to the present law enacted by the General Assembly of Georgia in 1901."

SPECIAL NOTICE.

The new seedling canes mentioned in this paper—can be had only from the Louisiana Sugar Experiment Station at New Orleans, La.

Requests for these canes should be sent to the Director of the Louisiana Sugar Experiment Station, during September.

A limited quantity will be distributed to reliable farmers, who will agree to pay the express on the canes, properly cultivate and care for them and report results.

UNIVERSITY of ILLINOIS.

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NUMBER 4

FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

JUNE 1, 1904

B. E. McLIN
COMMISSIONER OF AGRICULTURE,
TALLAHASSEE, FLORIDA.

Part 1—Crops.	Part 2—Weather Report,
Part 3—Fertilizers	Part 4—Miscellaneous.

Entered January 31, 1903, at Tallahassee, Florida as
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of June, 1900.

These Bulletins are Issued free to those requesting them.

TALLAHASSEE, FLA.,
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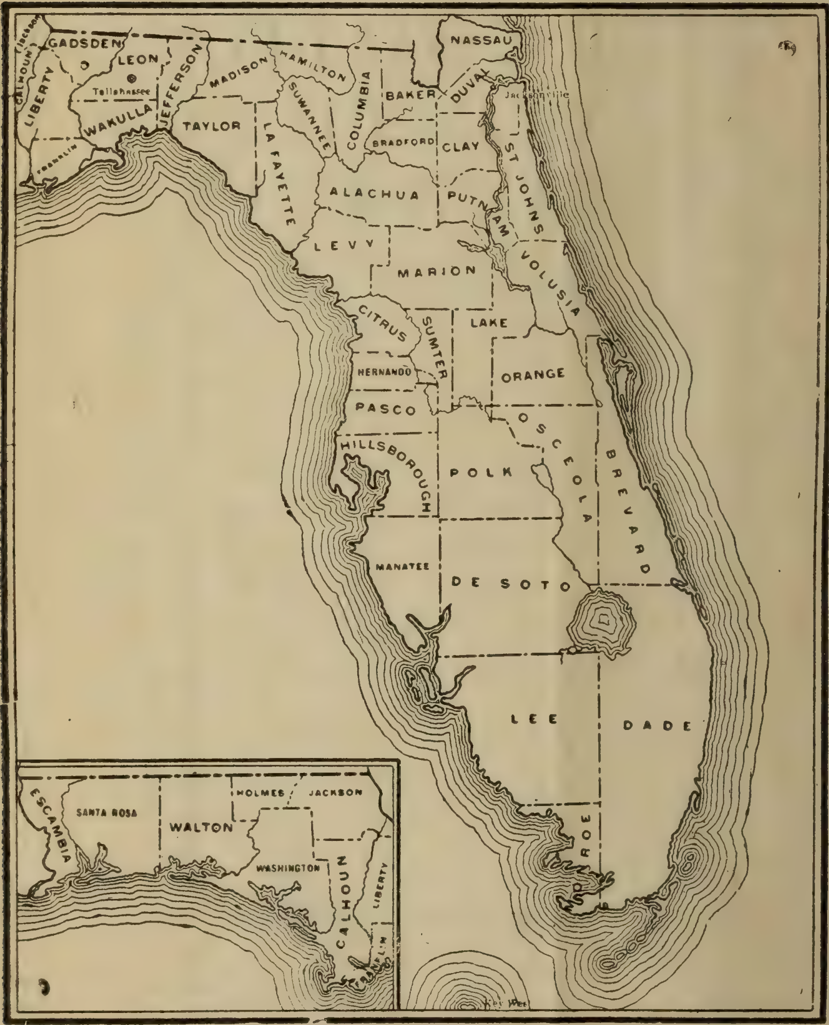
County Map of the State of Florida.

(For the Bulletin.)



PART I.

CROPS.

DEPARTMENT OF AGRICULTURE.

Hon. B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

Alachua County—All crops are badly damaged by the long drought, and unless we get an abundance of rain soon, the loss can not be made up later.

Baker County—The dry weather is becoming a very serious matter; all crops are greatly suffering for rain.

Bradford County—Considering the long drought, crops are in a remarkable good condition. Cotton is suffering from some disease siimlar to blight and wilt; in some parts it is showing badly, crops need rain very much. Fruit crops are very good.

Brevard County—We have had good rains, and fruit is holding to the tree well. It is notable that these are much fewer insect pests complained of than usual. All crops are in good shape and prospect fine for large crop; pineapple crop is a little short of last year.

Calhoun County—The truck farmers are nearly ruined for want of rain; the drought has lasted eight weeks, and the only rain we have had has been slight sprinkles once or twice. Corn is standing the drought well, but cannot go much longer without rain.

Citrus County—Watermelons and cantaloupes have suffered greatly on account of extreme dry weather, also Irish potatoes. Corn is standing the drought well, but is also in need of rain.

Columbia Coungy—The continued drought has been disastrous to nearly all crops; vegetable gardens have suffered much; cotton has not suffered yet, and if rain comes soon the corn crop will be an average.

DeSoto County—On the whole, the season has been a fair average for this section and all crops are doing well! we have had no extremes of wet or dry, though rain is needed now.

Escambia County—Upland cotton is very much troubled with lice, but it is growing; there was an increased acreage planted. The corn crop is large and doing well, but needs rain; the peach crop is fine, but pears are badly blighted.

Franklin County—The weather is terribly dry. Unless rain occurs within a week, all crops will be damaged.

Gadsden County—The stands of field crops are poor on account of dry weather; virtually no grass has shown up, therefore crops are in good condition; rain is badly needed, and till we get it, prospective yield uncertain.

Hamilton County—There has been, and still continues, a long spring drought which has cut short all crops. Friut crops are good, particularly peaches.

Hillsborough County—Early dry weather cut some crops very short. Later rains have much improved conditions and a few crops are coming out nicely. Red spider has been quite prevalent on citrus trees, and drought is beginning to affect orange trees.

Holmes County—Irish potatoes have suffered severely from drought; the weather is most favorable for working crops. Rain is very much needed, and if it does not come soon, some crops will be very short.

Jackson County—Crops are in good clean condition, but needing rain very much. The vegetable and watermelon crops did very well, and fruit crops are very good. All crops need rain.

Jefferson County—On the whole, crops in this county are doing well, some of them are the largest for several years; rain is needed and will, if it comes soon, make the finest crops for a long time; the peach crop is very fine.

LaFayette County—Field crops are suffering for rain, the drought has been very severe. The peach crop is the best for a number of years.

Lake County—The weather is very dry; we are needing rain very badly. Watermelons doing very bad, not more than half of a crop, and quality inferior. The young oranges are dropipng on acocunt of dry weather.

Lee County—All crops in good condition and growing finely; some of the crops are the finest and largest for many years; pineapple crop is a little short.

Leon County—Owing to the long continued drought cotton and corn are small, and growing slow; rain is very much needed, and the lac kof it has caused the vegetable crops to be short and products inferior in quality, on the average. The absence of rain is getting to be a very serious matter with farmers.

Madison County—Crops are in fair condition, considering the dry weather, which has prevailed for so long. Some crops are turning out well, and later ones will be failures unless we have rains.

Manatee County—The drought is making itself badly felt; crops are suffering much for rain; fruit trees and crops doing well.

Marion County.—Cantaloupes and watermelons are being shipped, and seem to be of extra fine quality. There will be the largest crop of peaches and pears seen for some years, but plums are off. Weather is very dry and rain badly needed for most field crops.

Nassau County—The weather is very, very dry and crops are suffering badly. All kinds of truck crops will be very light; fruit crops are fairly good.

Pasco County.—No rain at all, fruit trees, crops and vegetables suffering greatly. Peach crop fine.

Polk County—Field crops are doing very well but are needing rain; vegetable crops, doing fairly well, and a great many have been shipped to market. Fruit crops so far are very good, with good prospect for oranges.

Santa Rosa County.—The drought has had a bad effect on all crops .and will cut many of them very short unless rain comes soon; fruit crops are fairly good, specially the peach crop.

Sumter County—The drought has lasted so long, that it is having a very had effect on all crops; they will be very seriously damaged unless we get rain soon; the melon and peach crops are good ,but the melon crop has been seriously affected by the dry weather.

Suwannee County—We are passing through a very severe drought, and all crops are needing rain very badly, though crops look well considering they have had so little rain. From an agricultural standpoint our county is improving steadily.

Washington County—Crops are in fair shape considering the long severe drought; the only good from the drought is that the farmers have been able to keep the crops clean of grass. The melon and peach crops are very good, but all need rain very much.

REPORT OF CONDITION AND PROSPECTIVE YIELD OF CROPS FOR MAY, 1904, AS COMPARED WITH AN AVERAGE.

COUNTIES	Upland Cotton	Sea Isla'd Cotton	Corn	Sugar Cane	Rice	Sweet Potatoes	Field Peas	Cassava	Velvet Beans	Peanuts	Hay	Tobacco
	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition
Alachua....	....	60	80	40	40	50	40	70	....	70	....	....
Baker... ..	...	85	75	50	50	75	50	...	....	...	....	....
Bradford ..	....	100	90	100	85	80	95	....	100	90	....	....
Brevard...	...	....	100	....	....	100	100	....	....	...	....	....
Calhoun...	75	75	75	60	....	...	75	....	....	70	...	....
Citrus.....	...	....	100	85	...	100	100	...	100	85	75	....
Clay.......	...	90	100	80	...	100	100	100	100	100		....
Columbia..	....	100	90	90	100	80	100	100	100	100	...	....
Dade	...	..	....	....	...	100	100	...	100	...		....
DeSoto ...	....	....	95	90	95	95	100	100	100	90	100	90
Escambia..	100	....	125	100	100	100	100	100	100	125	100	100
Franklin...	...	....	90	90	...	90	90	....	.	90	....	....
Gadsden...	100	100	100	100	....	100	100	100	90	50	20	100
Hamilton..	....	90	75	75	60	60	60	60	75	75	60	....
Hernando..	....	....	80	120	....	....	..	....	200	....	....	....
Hillsboro..	100	....	105	100	...	....	105	95	110	...	100	....
Holmes....	95	....	100	100	90	90	100	....	...	100	....	....
Jackson ..	105	115	105	100	100	90	..		110	100	100	....
Jefferson ..	100	100	100	100	...	100	80	....	100	100	60	....
LaFayette.	....	85	90	75	...	....	90	..	....	90	. ..	....
Lake.......	....	....	75	50	....	....	80	...	100		...	....
Lee........	....	....	125	100	100	110	100	100	100	110	120	100
Leon.	85	95	90	90	....	90	90	....	85	85	80	100
Levy.......	....	95	100	100	100	100	100	90	100	90	...	....
Madison...	90	90	100	110	90	75	100	....	...	80	...	....
Manatee...	...	....	80	80	90	90	....	....	.	....	90	....
Marion....	90	90	85	90	80	50	90	80	90	90	80	....
Nassau....	....	....	90	75	....	90	....	....	....	...	....	....
Pasco	....	....	80	100	....	100	..	....	80	....	....	100
Polk.......	....	....	110	100	100	80	100	100	75	100	....	....
Santa Rosa	75	...	75	100	100	90	90	...	100	100	90	....
Sumter.....	...	75	75	85	.	100	100	75	75	75	....	....
Suwannee..	....	90	90	80	50	50	60	40	50	90	....	....
Washin'ton	100	90	90	100	90	85	95	80	100	100	....	....
Gen'l av'ge per cent..	93	90	92	88	84	87	89	86	93	90	83	98

CONDITION OF CROPS—Continued.

COUNTIES	Broome Corn	Orange Trees	Lemon Trees	Limes	Grape Fruit Trees	Bananas	Guavas	Irish Potatoes		Tomatoes	
	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	....	70	....	...	......	......	....	80	75	70	60
Baker	....	....	....	...	....	......	....	75	75	....	....
Bradford	....	....	....	....	.....	......	....	100	100	100	100
Brevard	....	125	115	110	125	100	110	100	100	....	....
Calhoun	....	....	....	....	.....	......	....	....	....	....	....
Citrus	....	75	....	....	75	......	....	85	90	100	100
Clay	....	....	...	...	......	......	....	100	90	100	100
Columbia	....	....	....	....	......	......	....	100	90	100	100
Dade	....	110	105	110	105	100	100	....	....	100	150
DeSoto	100	95	95	95	95	90	90	100	120	95	120
Escambia	100	....	....	....	......	......	....	100	150	100	100
Franklin	....	....	100	....	.....	......	....	80	80	80	80
Gadsden	....	....	....	....	......	......	....	100	100	100	100
Hamilton	....	....	....	....	......	......	....	75	50	75	50
Hernando	....	....	....	....	......	......	....	80	80	....	....
Hillsboro	....	105	100	....	105	....	80	110	110	95	95
Holmes	....	....	....	....	......	......	...	75	60	100	100
Jackson	...	...	....	....	.....	......	....	90	90	100	100
Jefferson	....	....	....	....	......	......	....	100	100	...	....
LaFayette	....	....	....	....	......	......	....	100	50	....	....
Lake	....	100	100	....	100	......	....	50	50	50	50
Lee	90	120	100	110	100	90	110	120	120	100	100
Leon	....	100	....	....	......	......	....	100	100	90	85
Levy	....	100	....	....	..	......	....	100	100	100	100
Madison	....	....	....	....	......	......	....	100	100	100	100
Manatee	....	90	80	80	80	100	80	50	50	50	50
Marion	....	100	100	100	100	......	....	50	50	75	75
Nassau	....	100	....	....	......		....	100	100	90	100
Pasco	....	100	100	..	100	......	....	70	70	80	80
Polk	....	80	80	....	80	......	....	100	125	100	120
Santa Rosa	...	..	....	....	.....	......	....	100	100	75	75
Sumter	...	75	....	....	......	......	....	100	100	85	85
Suwannee	50	....	....	....	......	......	....	....	....	...	....
Washin't'n	....	..	....	....	......	......	....	....	....	....	....
Gen'l av'ge per cent	85	97	98	94	97	96	95	90	89	89	91

CONDITION OF CROPS—Continued.

COUNTIES	Egg Plants		Celery		Cabbage		Cucumbers		Pepper	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua........	60	60	....	....	80	80	75	80	....	....
Baker........	......	....	....	....	...	....	....	....	....	....
Bradford........	......	......	....	....	....	....	100	100	....	....
Brevard........	......	......	80	80	100	100	....	....	....	....
Calhoun........	......	......	....	....	....	....	....	....	....	....
Citrus........	100	100		....	100	100	100	100	....	....
Clay...........	......	......	....	....	100	100	100	100	....	....
Columbia........	......	......	....	....	80	75	80	80	....	....
Dade........	100	100	....	..	....	....	100	100	....	....
DeSoto........	95	90	90	80	100	100	100	100	95	100
Escambia........	100	100	100	100	100	100	100	100	100	100
Franklin........	......	....	....	...	80	75	80	85	80	80
Gadsden........	......	......	....	...	....	....	....	....	....	....
Hamilton........	......	......	....	....	....	....	60	60	60	60
Hernando......	......	......	....	....	....	....	....	....	....	....
Hillsboro....	......	......	110	110	70	65	50	50	....	....
Holmes........	......	......	....	....	100	100	100	100	90	90
Jackson.....	......	......	....	....	....	....	110	110	....	....
Jefferson......	......	......	....	....	100	100	50	50	100	100
LaFayette......	......	......	...	....	....	...	...	....	....	....
Lake........	......	......	....	....	....	....	....	....	....	....
Lee...........	100	100	90	90	100	100	120	100	100	120
Leon...........	......	......	....	....	100	100	100	100	100	100
Levy...........	......	......	....	....	....	....	80	90	....	....
Madison.....	......	......	....	...	....	....	....	....	....	....
Manatee........	......	......	....	....	....	....	....	....	....	....
Marion........	75	50	50	50	75	75	90	99	90	90
Nassau........	......	......	....	....	....	....	85	75	....	....
Pasco..........	......	......	....	..	....	....	80	70	100	100
Polk..........	75	70	60	70	100	125	100	100	100	80
Santa Rosa....	100	100	....	....	100	100	100	100	100	100
Sumter........	75	70	....	....	90	90	95	95	....	....
Suwannee......	......	......	....	....	....	....	....	....	....	....
Washington....	......	......	....	....	....	....	....	....	....	....
Gen'l av'ge.... per cent......	88	84	83	83	93	93	89	88	93	93

CONDITION OF CROPS—Continued.

COUNTIES	Beans		Water-melons		Cantaloupes		Pineapples	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	....	....	60	60	50	40	......	......
Baker	....	....	50	50	50	50	......	......
Bradford	90	90	100	100	......	......	......	......
Brevard	100	100	100	100	....	......	......	......
Calhoun	....	....	....	......	......	......	......	......
Citrus	100	100	85	85	85	85	......	......
Clay	100	100	....	......	......	......	......	......
Columbia	80	75	100	100	100	100	......	......
Dade	....	....	......	......	......	......	100	100
DeSoto	90	130	100	110	100	150	95	100
Escambia	100	150	100	125	100	100	......	......
Franklin	80	80	80	85	80	85	......	......
Gadsden	....	.	....	......	......	......	......	......
Hamilton	75	75	80	75	80	75	......	......
Hernando	....	....	......	......	......	......	......	......
Hillsboro	90	105	90	90	105	105	100	100
Holmes	100	100	110	110	80	80	......	......
Jackson	....	....	100	100	......	......	......	......
Jefferson	100	100	100	100	100	100	......	......
LaFayette	....	....	......	......	......	......	......	......
Lake	....	....	50	50	..	....	......	......
Lee	90	100	100	90	90	100	90	90
Leon	85	85	85	90	80	85	......	......
Levy	100	100	100	100	100	100	......	......
Madison		....	100	110	100	100	......	......
Manatee	....	....	50	50	50	50	100	100
Marion	75	60	90	90	80	90	......	......
Nassau	75	75	90	90	...	....	......	......
Pasco	....	..	100	100	......	......	......	......
Polk	....	....	100	100	100	125	......	......
Santa Rosa	100	100	75	75	75	75	......	......
Sumter	....	....	100	100	75	75	......	......
Suwannee	....	..	100	100	100	100	......	.....
Washington	...	..	100	100	......	.. .	......	......
Gen'l av'ge per cent	90	96	89	91	85	89	97	98

CONDITION OF CROPS—Continued.

COUNTIES.	Peaches		Pears		Grapes		Plums	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	50	50	75	70	90	100	50	40
Baker	75	75	40	40	75	75	....	......
Bradford	100	100	100	100	100	100	100	100
Brevard	....	....	....	.....	......	.....	......	......
Calhoun	90	85	90	....	100	100	.....	......
Citrus	100	105	85	85	......	.....	100	105
Clay	....	....	....	6	.....	.....	.....	......
Columbia	90	90	....	.....	100	100	100	100
Dade	...	...	....	. .	......	.....	..	......
DeSoto	100	110	100	110	100	110	100	120
Escambia	100	200	....	.....	100	100	100	100
Franklin	....	....	80	90	100	100	.....	......
Gadsden	..	...	....	.....	......	.....	......	......
Hamilton	60	60	60	60	60	60	60	60
Hernando	100	120	60	60	100	100	.....	......
Hillsborough	95	105	100	80	100	90	100	90
Holmes	100	100	...	.....	90	90	100	100
Jackson	100	100	100	100	100	100	100	100
Jefferson	100	100	....	.....	100	100	100	100
LaFayette	100	110	...	....	......	....	......	.....
Lake	75	75	50	50	100	100	.....	......
Lee	100	100	100	100	100	100	90	90
Leon	100	100	70	30	85	75	85	85
Levy	100	100	....	.....	100	100	.....	......
Madison	50	50	....	.....	100	100	90	90
Manatee	100	80	...	.....	100	100	.....	......
Marion	100	110	100	125	90	100	90	90
Nassau	100	100	75	75	100	100	......	......
Pasco	120	120	....	.....	......		.....	......
Polk	100	100	100	60	100	120	100	100
Santa Rosa	90	90	50	50	100	100	100	100
Sumter	110	110	....	....	100	100	100	100
Suwannee	....	....		.....	......	.....		.....
Washington	85	90	....	.....	......	.....	......	......
General Average Per Cent	93	101	80	71	96	97	93	93

PART II.

WEATHER REPORT.

U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

Central Office: Washington, D. C.

FLORIDA SECTION:

A. J. MITCHELL, Section Director.,

JACKSONVILLE, FLA.

REPORT FOR APRIL, 1904.

SALIENT CLIMATIC FEATURES.

ATMOSPHERIC PRESSURE.

	Inches.
Mean, as determined from records of 4 stations	30.03
Departure from the normal, 4 records	—0.01
Highest observed, at Jacksonville on the 4th	30.33
Lowest observed, at Jacksonville on the 26th	29.76
Absolute range for the State	0.57

TEMPERATURE.

	Degrees.
Mean, as determined from records of 60 stations	68.3
Departure from the normal, 30 records	—0.4
Highest monthly mean, at Key West	75.3
Lowest monthly mean, at DeFuniak Springs, Marianna, St. Andrews and Wausau	64.6
Highest recorded, at Ocala on the 2d	95
Lowest recorded ,at Macclenny and Marianna on the 14th and Middleburg on the 9th	38
Absolute range for the State	57

PRECIPITATION.

	Inches.
Average, as determined from records of 60 stations	1.71
Departure from the normal, 29 records	–0.64
Greatest amount for any 24 hours, at Eustis on the	

7th	2.73
Greatest monthly amount, at Eustis	3.88
Least monthly amount, at Marco	0.36
Average number of days on which 0.01 or more fell	4

WIND.

Prevailing wind direction	Southwest

WEATHER.

Average number of clear days	19
Average number of partly cloudy days	8
Average number of cloudy days	3

WEATHER AND CROPS.

The month was notably dry and during the greater portion of the time it was colder than the normal. These conditions were very favorable for farm work. At the beginning of the month the soil was in a fairly good condition for cotton planting which was pushed with energy. As the month advanced, however, rain became less frequent resulting in an abnormally dry month. The cold nights militated against rapid growth, and favored the increase of insects, which became sufficiently numerous to damage some corn and cotton. At the close of the month late planted cotton had not germinated, and a large acreage was to be planted. Early planted cotton was chopped and worked; a fair growth was made. Corn on high land suffered much for rain; a fairly satisfactory growth, however, was maintained. The early planted corn in the southern portion of the State was in tassel at the close of the month. The continued dry weather, brought forth the red spider, which was very annoying in many groves. A great deal of fruit dropped; not to such an extent, however, to seriously reduce the crop yield. Pineapples suffered from the dry weather, and the crop will probably be much reduced thereby. The growth of pineapples has been slow, owing to the cool weather during thes pring, and there has not been sufficient rain to fill them out. Vegetables were plentiful and shipments large. The greatest monthly amount of precipitation was 3.9 inches, in Lake county; a large section in the State had less than an inch of rain.

COMPARATIVE TEMPERATURE AND RAINFALL DATA FOR APRIL, WITH DEPARTURES FROM NORMAL, DURING THE PAST THIRTEEN YEARS.

Year	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Mean	71.3	72.7	70.0	68.4	71.0	70.2	67.0	67.7	70.0	65.2	68.3	67.1	68.8
Depar	+2.6	+4.0	+1.3	—0.3	+2.3	+1.5	—1.7	—1.0	+1.3	—3.5	—0.4	—1.6	—0.4
Total	0.87	2.17	1.03	4.75	0.50	4.44	1.39	3.40	4.49	2.26	1.45	0.45	1.71
Depar	—1.47	—9.18	—1.32	+2.40	—1.85	+2.09	—0.96	+1.05	+2.14	—0.09	—0.90	—1.00	—0.64

PRESSURE AND WIND TABLE.

STATIONS	Atmospheric Pressure					Wind Velocity in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville..	30.04	30.33	4	29.76	26	7,846	36	SW	26	100	33	68
Jupiter	30.04	30.21	5	29.86	27	8,217	60	S	9	97	52	75
Key West.....	30.0[illegible]	30.14	1	29.88	30	7,378	48	SW	30	91	50	72
Pensacola.....	*30.07	30.32	4	29.86	26	8,064	30	SW	9	97	37	74
Tampa........	30.04	30.24	23	29.86	26	4,960	24	S	7	95	31	69

*8 a. m, reading only.

CLIMATOLOGICAL DATA FOR APRIL, 1904.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Farh.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	
Northern Section.																			
Archer	Alachua	92	22	67.2	—0.8	88	2	44	11	34	1.14	—1.75	0.79	...	3	16	14	0	e.
Federal Point	Putnam	10	12	66.4	—0.7	87	2*	48	5	38	1.77	—0.89	0.86	...	4	19	7	4	ne.
Fernandina	Nassau	15	3	66.4	.....	87	16	49	11	33	0.84	......	0.56	...	4	15	11	4	ne.
Fort George†	Duval	15	19	67.6	—0.6	83	12	54	14	...	...	...	...	...	...	...	...	...	se
Gainesville	Alachua	175	18	67.4	—0.3	88	2*	44	11	30	1.83	—0.62	0.96	...	4	21	1	8	sw.
Huntington	Putnam	50	8	67.0	—0.4	88	3*	43	11	35	0.80	—1.72	0.78	...	2	20	7	3	sw.
Jacksonville	Duval	43	34	66.4	—2.5	86	16	50	11	25	0.81	—2.06	0.38	...	6	15	8	7	sw.
Jasper	Hamilton	165	6	65.8	+0.3	89	16	41	11	40	0.62	—1.65	0.52	...	2	22	4	4	sw.
Johnstown	Bradford	125	9	65.3	—1.8	a89	25	a41	14	a42	2.56	+0.12	1.22	...	3	10	8	12	....
Lake City	Columbia	201	14	66.0	—2.8	89	1*	41	14	39	0.97	—2.14	0.46	...	4	10	13	7	sw.
Macclenny	Baker	140	9	65.8	—1.8	92	2	38	14	48	1.08	—2.82	0.36	...	5	21	4	5	e.
Micanopy	Alachua	105	8	c68.8	—2.2	c90	2	c44	10	c37	2.00	—0.04	2.00	...	1	...	...	...	.....
Middleburg	Clay	20	5	65.1	.....	89	3*	38	9	43	2.68	......	1.65	...	3	18	6	6	e-se.
Pinemount	Suwannee	103	2	66.0	.....	a89	3*	a40	14	a40	0.91	......	0.47	...	4	23	6	1	sw.
St. Augustine	St. Johns	10	54	66.8	—1.4	88	2	43	11	36	1.40	—2.30	0.93	...	4	6	7	17	s.
Sumner	Levy	23	14	65.6	—1.2	88	20*	40	14	39	2.45	—0.11	2.15	...	3	22	8	0	w.
Switzerland	St. Johns	...	8	a66.6	+1.3	87	16	j44	11	j34	1.46	—4.00	0.72	...	4				......

CLIMATOLOGICAL DATA FOR APRIL, 1904 —Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Central Section.																			
Bartow.	Polk.	17	9	71.2	+2.2	90	8*	47	12	38	2.39	—0.08	1.84	...	4	16	14	0	sw.
Brooksville	Hernando	328	12	69.0	—0.1	92	21	47	11	38	1.50	—1.36	0.80	...	3	27	0	3	w.
Clermont.	Lake	110	12	71.8	+0.1	92	21	50	11	34	0.97	—0.79	0.50	...	4	14	16	0	w.
De Land	Volusia	32	4	58.0	.....	88	16	45	11	35	.....	.....		...	...	22	6	2	ne.
Eustis.	Lake	180	14	71.4	+1.0	92	2	49	4*	32	3.88	+1.73	2.73	...	7	14	10	6	w.
Fort Mead	Polk	125	21	70.5	+1.9	93	19*	47	14	38	2.98	+0.88	1.20	...	4	27	3	0	e.
Fort Pierce	Brevard	25	13	.....	.....	...	...	..	...	...	.....	.....	.....	...	...	...	...	...	.....
Grasmere	Orange	175	8	70.0	—0.1	87	21	49	11	31	.....	.....	.....	...	...	27	3	0	sw.
Inverness	Citrus	43	4	d69.0	...	d91	21	d45	11	d40	1.35	.....	1.11	...	3	...	...	...	sw.
Kissimmee	Osceola	65	12	69.6	—1.9	88	12*	48	11	33	2.25	—0.04	0.85	...	4	19	6	5	se
Malabar	Brevard	..	3	a71.4	.....	c89	21	d49	10*	34	0.82	.....	0.56	...	3	30	0	0	e.
Merritt's Island	Brevard	20	23	71.7	—0.1	d85	15*	57	11	21	2.88	—0.10	1.20	...	4	22	6	2	ne-e.
New Smyrna	Volusia	20	16	d68.4	—1.8	90	16	45	11	d38	1.10	—0.84	0.85	...	2	...	...	...	se.
Ocala	Marion	150	17	69.0	0.0	95	2	b45	11	41	1.20	—0.94	0.87	...	3	16	12	2	se-w.
Orange City	Volusia	50	14	70.2	0.4	g94	16	42	29	44	2.01	+0.03	1.15	...	2	21	9	0	sw.
Orange Home	Sumter	75	...	g68.2	.....	90	21	g42	5	g38	1.44	.....	0.71	...	4	...	...	...	.....

CLIMATOLOGICAL DATA FOR APRIL, 1904.—Continued.

STATIONS.	COUNTIES	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hour.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Orlando	Orange	98	12	71.0	+1.0	92	2*	45	11	36	2.20	+0.05	1.10	...	3	22	2	1	sw.
Plant City	Hillsbor'gh	121	12	....	.....	...	...	47	11	...	1.55	—1.27	0.80	...	2	..	...	...	......
Rockwell	Marion	...	5	69.7	. .	94	13	46	10	45	1.15	......	1 11	...	2	19	11	0	sw.
St. Leo	Pasco	140	10	69.6	—1.0	91	20	47	11	36	1.50	—1.44	0.73	...	6	18	8	4	w.
Tampa	Hillsbor'gh	20	14	70.1	—1.4	88	20	54	14	28	0.66	—1 67	0.58	...	3	17	9	4	w.
Tarpon Springs	Hillsbor'gh	20	20	69.2	—1.2	89	20	49	12	33	1.14	—0.91	0.72	...	4	22	3	5	uw.
Titusville	Brevard	11	13	70.2	+1.3	91	16	47	11	33	1.81	—0.22	0 90	...	5	8	16	6	se.
Southern Section.																			
Avon Park	De Soto	150	8	71.8	+0.2	91	16	48	14	40	2.42	+0.71	0.78	...	10	21	7	2	se.
Flamimgo	Monroe	11	4	73.3	...	88	18*	50	29	30	1.08	......	1.01	...	2	27	1	2	e.
Hypoluxo	Dade	...	8	72.2	+0.6	88	21	53	29	30	1.30	—1.19	0.25	...	6	20	8	2	se.
Jupiter	Dade	28	17	73.4	+1.4	89	21	54	11	22	2.85	+0 09	2 52	...	6	11	17	2	e.
Key West	Monroe	22	34	75.3	+0.8	84	8*	66	30	15	3.59	+2.38	2.15	...	7	16	12	2	ne.
Manatee	Manatee	16	21	70.1	-0.3	90	20*	47	12	34	0.37	—1.73	0.13	...	4	19	11	0	nw.
Marco	Lee	...	4	.....	.....	89	15*	...	..	..	0.36	......	0.28	...	2	27	1	2	w.
Miami	Dade.	...	8	.....	.....	90	27	...	...	.	2.04	—1.54	1.80	...	3	10	17	3	ne.
Myers	Lee	19	21	71.3	—0.8	88	15*	50	11	29	1.10	—1.53	1.10	...	1	26	4	0	sw.
Nocatee	De Soto	43	5	71.8	.....	92	21	48	10	35	0.60	......	0.41	...	2	21	4	5	

CLIMATOLOGICAL DATA FOR APRIL, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (un-melted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Western Section.																			
Apalachicola	Franklin	..	...	67.8	.....	83	18	47	4	25	2.51	......	1.60	...	2	22	4	4	s.
Bonifay	Holmes	116	3	65.6	.....	85	2*	43	4*	38	2.98	......	1.58	...	2	15	7	8	sw.
Carrabelle	Franklin	12	9	67.5	+1.6	89	25	44	4	31	1.90	+0.33	1.80	...	2	26	1	3	sw.
DeFuniak Sp'gs	Walton	193	8	64.6	+0.2	85	1*	40	4*	34	2.25	—1.55	1.25	...	3	15	14	1	s.
Madison	Madison	...	...	66.5	.....	88	2	46	11	34	1.75	......	1.53	...	2	25	2	3	e.
Marianna	Jackson	85	5	64.6	.....	88	20	38	14	43	2.26	......	1.11	...	3	19	8	3	sw.
Milton	Santa Rosa	..	...	.....	.....	...	...	...	...	..	......	......	.....	...	...	...	...	...	.....
Molino	Escambia	49	1	65.6	.....	90	16	39	28	44	1.69	......	1.24	...	2	17	5	8	s.
Monticello	Jefferson	207	...	64.9	.....	87	2	44	9*	40	1.90	......	0.75	...	4	17	9	4	sw.
Pensacola	Escambia	56	25	65.7	—2.0	79	21	49	4	22	1.08	—2.40	0.62	...	3	18	10	2	nw.
Quincy	Gadsden	260	4	.....	.....	...	...	...	...	...	......	......	.....	...	...	...	...	...	.....
St. Andrew	Washington	12	7	64.7	+2.5	84	22*	40	14	31	3.13	—1.39	1.50	...	3	29	1	0	sw.
Stephensville. o	Taylor	...	5	65.0	.....	88	19*	37	14	39	1.26	.....	0.68	...	3	6	23	1	sw.
Tallahassee	Le n	193	19	66.8	—0.1	83	20*	45	4	37	1.65	—0.34	0.75	...	4	24	4	2	s.
Wausau	Washington	250	7	64.6	—3.3	87	20*	40	14*	39	2.00	—1.58	1.20	...	3	10	18	2	sw.
Wewahitchka	Calhoun	...	5	65.8	.....	87	2	44	27	34	2.47	......	1.40	...	3	19	2	9	s.
	State Means	...	...	68.3	—0.4	...	.	...	...	...	1.71	—0.64	...	...	4	19	8	3	sw.

CLIMATOLOGICAL DATA FOR APRIL, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inch					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days	Number cloudy days	
Late Report March, 1904.																			
Micanopy............	....	...	...	f67.3	+1.0	f94	22	f42	9*	41	1.00	—3.44	1.00	...	1	...	...	...	......

All records are used in determining State means, but the mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation.

a, b, c, etc., following name of station indicate number of days missing from report.

†Thermometers are not self-registering, and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily.

*More than one day. ‡Weather Bureau.

PART III.

FERTILIZERS.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

STATE VALUATIONS, 1904.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1904.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen).	15 cents a pound
Potash (as actual potash, K2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $1·25 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid	6.22 per cent.	x $1.00 —	6.22
Insoluble Phosphoric Acid	1.50 per cent.	x .20—	.30
Ammonia	3.42 per cent.	x 3.00—	10.26
Potash	7.23 per cent.	x 1.10—	7.95
Mixing and bagging			1.25
Commercial value at sea ports			25.98

Or a fertilizer analyzing as follows:

Available phosphoric acid	8 per cent.	x $1.00—	$ 8.00
Ammonia	2 per cent.	x 3.00—	6.00
Potash	2 per cent.	x 1-10—	2.20
Mixing and bagging			1.25
Commercial value at sea ports			$17.45

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of ten per cent. can be made in above valuations, *i, e.*:

Available Phosphoric Acid - -	90 cents per unit
Potash (K_2O) - - - -	99 cents per unit
Ammonia (or equivelent in nitrogen)	$2.70 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

MARKET PRICES OF CHEMICALS AND FERTILIZING MATERIALS AT SEA PORTS, JAN. 4, 1904.

Ammoniates.	Less than 5 tons	5 to 10 tons.	10 tons & over.
Nitrate of Soda 17 per cent. Ammonia	$50.00	$49.00	$49.00
Sulphate of Ammonia 25 per cent Ammonia	71.00	70.50	70.00
Dried Blood 16 per cent. Ammonia	54.00	53.50	53.00
POTASH.			
High Grade Sulphate Potash 48 per cent. Potash (K_2O)	52.00	51.00	50.00
Low Grade Sulphate Potash 26 per cent. Potash (K_2O)	32.00	31.00	30.00
Muriate of Potash 50 per cent. Potash (K_2O)	46.00	45.00	44.00
Nitrate Potash, 13 Am., 42 Potash (K_2O)	82.00	81.00	80.00
Kainit 12 per cent. Potash	14.00	13.50	13.00
Canada Hardwood Ashes 4 per cent. (K_2O) Potash	17.00	16.50	16.00
AMMONIA AND PHOSPHORIC ACID.			
High Grade Blood and Bone, 10 10 per cent. Ammonia 7 per cent. Phosphoric Acid	35.00	34.50	34.00
Low Grade Blood and Bone, 6½ per cent. Ammonia, 8 per cent. Phosphoric Acid	27.00	26.50	26.00
Owl Brand Tankage, 5½ per cent. Ammonia	20.00	19.50	19.00

Raw Bone 4 per cent. Ammonia 22 per cent. Phosphoric Acid..	29.00	28.50	28.00
Ground Castor Pomace 6 per cent. Ammonia, 2 per cent. Phosphoric Acid	22.00	21.50	21.00
Bright Coton Seed Meal 8 per cent. Ammonia market quotations	26.00	25.50	25.00
Dark Coton Seed Meal, 5 per cent Ammonia, market quotations	18.00	17.50	17.00

PHOSPHORIC.

Double Super Phos., 45 per cent. Available Phosphoric Acid ...	45.00	44.50	44.00
High Grade Acid Phosphate, 16 per cent. Available Phosphoric Acid	16.00	16.50	15.00
Acid Phosphate 14 per cent. Available Phosphoric Acid....	14.00	15.50	13.00
Boneblack 17 per cent. Available Phosphoric Acid	25.00	24.50	24.00

MISCELLANEOUS.

H. G. Ground Tobacco Stems, 3 per cent. Ammonia, 9 per cent Potash	25.00	24.50	25.00
Pulverized Ground Tobacco Stems	16.00	15.00	15.00
Tobacco Dust, No. 1, 3 per cent. Ammonia, 2 K20 Potash......	21.00	20.50	20.00
Tobacco Dust, No. 2, 1½ per cent. Ammonia, 1½ per cent. Potash.	16.00	15.50	15.00
Dark Tobacco Stems, baled.....	16.00	15.50	15.00
Land plaster in sacks	10.50	10.25	10.00

Any formula will be mixed at the price of $1.25 per ton, in addition to the cost of the materials used.

FACTORS FOR CONVERSION.

To convert—

Ammonia into Nitrogen, multiply by	0.824
Nitrogen into ammonia, multiply by	1.214
Nitrate of soda into nitrogen, multiply by	16.47
Nitrogen, into protean by	6.25
Bone phosphate into phosphoric acid, multiply by	0.458
Phosphoric Acid into Bone Phosphate, multiply by	2.184
Muriate of Potash into actual potash, multiply by	0.632
Actual potash into muriate of potash, multiply by	1.583
Sulphate of potash into actual potash, multiply by	0.541
Actual potash into sulphate of potash, multiply by	1 85

For instance you buy 95 per cent. of nitrate of soda and want to know how much nitrogen in it, multiply 95 per cent. by 16.47 you will get 15.65 per cent nitrogen; you want to know how much ammonia this Nitrogen is equivalent to, then multiply 15.65 per cent. by 1.214 and you get 18.99 per cent., the equivalent in ammonia.

CHEMICAL EQUIVALENTS.

Under the law and the regulations of the department chemical equivalents of the three essential elements, Ammonia, Available Phosphoric Acid, and Potash, are not allowed in the guarantee. A few instances have been noted, particularly in cotton seed meals, when the Ammonia is guaranteed, and followed by a statement of the protean contents:

As. Ammonia ....5 per cent.
Protean ....25.75 per cent.
Or Ammonia ....8 per cent.
Protean ....41.18 per cent.

Such a guarantee is misleading, as the terms "Ammonia" and "Protean," are equivalent, and only represent the "Nitrogen" (or ammonia) content of the goods.

Multiplying the nitrogen by 1.21 gives the ammonia thus, 3 per cent. nitrogen X1.21 gives ammonia 3.63 per cent. or nitrogen 3 per cent. X6.25 gives "Protean" 18.75 per cent.

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda............	17 to 19	....	....
Sulphate of Ammonia........	21 to 24	....	....
Dried Blood.................	12 to 17	....	....
Concentrated Tankage.......	12 to 15	1 to 2	....
Bone Tankage...............	6 to 9	10 to 15	....
Dried Fish Scrap............	8 to 11	6 to 8	....
Cotton Seed Meal...........	7 to 10	2 to 3	1½ to 2
Hoof Meal..................	13 to 17	1½ to 2	....

PHOSPHATE MATERIALS.

	Pounds per Hundred.		
	Ammonia	Avaiable Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphte...	....	....	26 to 32
Florida Rock Pnosphate.....	....	....	33 to 35
Florida Super Phosphate....	....	14 to 19	1 to 6
Grouned Bone...............	3 to 6	5 to 8	15 to 17
Steamed Bone...............	2 to 4	6 to 9	10 to 20
Dissolved Bone.............	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actual Potash	Am'nia	Phosphoric Acid	Lime
Muriate of Potash..........	50	....	....	....
Sulphate of Potash..........	48 to 52	....	....	....
Double Sul. of Pot. & Mag.	26 to 30	....	....	....
Kainit......................	12 to 12½	....	....	....
Sylvinit....................	16 to 20	....	......	....
Cotton Seed Hull Ashes......	15 to 30	....	to 9	10
Wood Ashes, unleached.....	2 to 8	....	to 2	30 to 25
Wood Ashes leached.........	1 to 2	....	to 1½	35 to 40
Tobacco Stems..............	5 to 8	2 to 4	......	3½
Cow Manure (fresh)..........	0.40	0 to 41	0.16	0.31
Horse Manure (fresh)........	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)........	0.67	1.00	0.23	0.33
Hog Manure (fresh)..........	0.60	0.55	0.19	0.08
Hen Dung (fresh)............	0.85	2.07	1.54	0.24
Mixed Stable Manure........	0.63	0.76	0.26	0.70

SPECIAL NOTICE.

The attention of persons sending samples of fertilizers for analysis is called to the following:

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER SAMPLES TO THE COMMISSIONER OF AGRICULTURE.

—SECTION 15 OF LAW.

Special samples of fertilizer sent in by purchasers, under Sec. 9 of the law approved May 22, 1901. Shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed and a FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICTLTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN OR BOTTLE, WILL BE ACCEPTED FOR ANALYSIS. This rule is adopted to secure fair samples of sufficient size to make the six necessary determinations, viz: Moisture, available and insoluble phosphoric acid, ammonia and potash; and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means, of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

COPIES OF THE FERTILIZER LAW.

Citizens interested in the fertilizer law of the State, and desiring to avail themselves of its protection, can obtain a copy free of charge by sending for sameto the Commissioner of Agriculture.

CAUTION TO PURCHASERS OF COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent. and above in ammonia, 2 per cent. or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its Commercial value is as follows:

8 per cent. ammonia @ $3.00	$24.00
2 per cent. available phosphate @ $1.00	2.00
1½ per cent. potash @ $1.10	1.65
	$27.65

The commercial value being in excess of the market value.

There is a quantity of adulterated cotton seed meal sold in the State, These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent. potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia	$13.50
1¾ per cent. phosphoric acid	1.75
1½ per cent. potash	1.65
Commercial value	$16.90

These goods are sold at $1.00 to $2.00 per ton less than prime meal. Their relative value is $10.75 less than prime meal. There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of ammonia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis and pay for the actual content of the valuable elements only.

R. E. ROSE, State Chemist. MARION G. DONK, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.
(Samples taken by purchaser).

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Special Mixture	473	.....	7.35	2.26	9.61	4.69	9.03	T. Kimball, St. Petersburg, Fla.
Fertilizer	474	.....	8.62	0.46	9.08	1.64	13.32	F. S. Hickock, Hastings, Fla.
Bone Compound (No. 1) ..	476	19.00	9.75	2.67	12.42	2.20	1.62	John M. Calhoun, Marianna, Fla.
Acid Phosphate (No. 2) ..	477	22.45	12.61	2.51	22.45	.....	.....	John M. Calhoun, Marianna, Fla.
Special Mixture	478	.....	6.08	0.76	6.84	4.36	7.86	R. D. Knight, Little River, Fla
Kentucky Brand—Pulverized Tobacco Stems....	479	.....	.....	.....	.....	2.89	10.14	Willson & Toomer Fert. Co., Jacksonville, Fla.
Cotton Seed Meal	480	.....	.....	.....	.....	7.02	.....	Schroeder & Auguinbaw, Quincy.
Fertilizer	481	14.25	4.90	0.32	5.22	3.57	12.99	J. F. Adams, Winter Park, Fla.
Sulphate of Potash	483	.....	.....	.....	.....	.....	50.48	Thos. W. Williams, Tampa, Fla.
Fertilizer	484	9.85	6.78	1.70	8.48	6.15	6.77	J. G. Powers, Terra Ceia, Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid			Ammonia.	Potash (K2O)	BY WHOM SENT
			Available.	Insoluble.	Total.			
Sea Island Cotton Seed...	485	.....	.....	.....	.....	4.14	.....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	486	.....	.....	.....	.....	4.92	.....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	487	.....	.....	.....	.....	5.62	.....	Florida Mfg. Co., Madison, Fla.
Fertilizer	488	.....	5.20	0.77	5.97	1.86	13.15	H. O. Wordenhoff, Plant City, Fla
Fertilizer (light)	489	.....	7.56	1.59	9.15	4.65	7.61	Mrs. E. M. Lane, Delray, Fla.
Fertilizer (dark)	490	.....	6.12	0.66	6.78	4.28	7.24	Mrs. E. M. Lane, Delray, Fla.
Dried Blood	491	.....	.....	.....	.....	14.85	.....	J. T. Stanley, Jensen, Fla.
Raw Ground Bone	492	.....	9.53	13.98	23.50	4.50	.....	J. T. Stanley, Jensen, Fla.
Wood Ashes	493	.....	.....	.....	.....	.....	0.24	J. T. Stanley, Jensen. Fla.
Ground Tobacco Stems ..	494	.....	.....	.....	.....	3.18	9.28	J. T. Stanley, Jensen. Fla.
Cotton Seed Meal	495	.....	.....	.....	.....	7.75	.....	Schroeder & Auguinbaw, Quincy.
Cotton Seed Meal	496	.....	.....	.....	.....	7.71	.....	James B. Bours, Jacksonville, Fla
Acid Phosphate	497	.....	18.74	0.75	19.49	.....	.....	Goulding Fert. Co., Pensacola.
Fertilizer (acid phosphate)	498	14.40	13.64	0.53	14.17	0.00	0.00	J. D. Clark, Mt. Pleasant, Fla.
Fertilizer No. 1..........	499	11.30	7.05	1.01	8.06	4.60	8.42	B. G. Hewet, Pebble, Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid.			Ammonia	Potash (K20.)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Fetilizer No. 2	500	11.35	7.10	1.16	8.26	4.51	8.49	B. G. Hewet, Pebble, Fla.
Fertilizer	501	.....	0.00	0.00	0.00	4.42	0.06	Peter Gardener, Palatka, Fla.
Guano	502	.....	.....	.....	26|13	3.71	3.14	James Holmes, Jensen, Fla.
Acid Phosphate	503	.....	13.68	2.05	15.73	.....	.....	Prof. O. J. Moore, Lisbon, Fla.
Crude Carbonate of Potash	504	.....	.....	.....	.....	.....	38.89	J. Hirschburg, Tallahassee, Fla.
White Carbonate of Potash	505	.....	.....	.....	.....	.....	62.62	J. Hirschburg, Tallahassee, Fla.
Fertilizer	506	10.85	7.30	1.26	8.56	3.18	3.52	W. M. Girardeau, Monticello, Fla.
Fertilizer	507	.....	9.71	1.56	11.27	5.36	7.68	P. L. Fiveash, Alliance, Fla.
Fertilizer	508	7.35	8.12	1.20	9.32	4.01	8.71	C. B. Robbinson, Corno, Fla.
Cotton Seed Meal	509	.....	.....	.....	.....	7.13	.....	J. E. Wirick, Jr., Lloyd, Fla.
Fertilizer	510	.....	6.10	5.57	11.67	2.08	8.46	R. L. McMullen, Clearwater, Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	511	10.45	9.99	1.96	8.95	4.63	4.86	Johnson & Co., Leesburg, Fla.
Fertilizer No. 1..........	512	9.10	7.87	0.73	8.60	2.24	1.28	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 2..........	513	1 .15	9.11	3.00	12.11	2.12	1.84	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 3..........	514	10.10	8.43	2.68	11.11	2.13	2.15	J. W. McKeown Co., Concord, Fla.
Ferilizer No. 4..........	514	11.30	10.52	3.26	13.78	2.47	1.89	J. W. McKeown Co., Concord, Fla.
Blood, Bone and Potash..	516	14.20	9.91	2.95	9.86	3.80	4.44	J. H. Dishong, Dover, Fla.
Dark Cotton Seed Meal and Potash	518	.25	.....	.....	2.03	5.02	3.81	R. L. Goodwin, St. Pierce, Fla.
Ground Tobacco Stems ..	519	.....	.....	.....	.....	2.92	9.24	Armour Fertilizer Works, Jacksonville, Fla.
Fertilizer	520	14.61	7.75	2.76	10.51	2.29	2.23	J. H. Hinton, Dover, Fla.
Fertilizer No. 3	521	6.95	8.49	1.95	10.44	2.15	13.71	E. J. Yates, Lakeland, Fla.
Fertilizer No. 2	522	10.95	7.22	1.39	8.61	4.46	8.07	E. J. Yates, Lakeland, Fla.
Fertilizer No. 1..........	523	14.25	8.17	3.02	11.19	2.22	2.26	E. J. Yates, Lakeland, Fla.
Fertilizer	524	9.25	8.03	0.72	8.75	4.44	11.44	H. Price Williams, Miami, Fla.
Rock Phosphate	525	.....	.....	.....	37.16	.....	.....	T. D. Hawkins, King's Ferry, Fla.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	526	10.90	7.74	2.96	10.70	4.87	13.79	S. B. Robbinson, Seven Oaks, Fla.
Armour's H. G. Tobacco. Dust	527	.....	.....	.....	.....	2.60	3.91	Armour Fert. Wks., Jacksonville.
Fertilizer	528	14.00	5.61	3.01	8.61	4.43	5.65	H. J. Drane, Lakeland, Fla.
Fertilizer	529	10.20	7.12	3.00	10.12	4.37	15.56	F. G. Sampson, Boardman, Fla.
Dark Cotton Seed Meal...	530	.....	.....	.....	1.94	4.99	1.49	N. H. Fogg, Altamonte Springs.
Bright Cotton Seed Meal.	531	.....	.....	.....	2.91	8.37	1.81	N. H. Fogg, Altamonte Springs.
Rock Phosphate..	532	.....	.....	.....	34.05	.....	.....	John S. Flanagan, San Antonia.
Ashes	533	.....	.....	.....	.....	.....	0.60	A. J. Rosetter, Enterprise, Fla.
Fertilizer	534	.....	1.63	0.77	2.40	4.00	7.08	W. J. Dyer, Stuart, Fla.
Fertilizer No. 1.........	535	.....	6.08	0.85	6.93	4.20	9.34	A. P. DeWolf, Crescent City.
Fertilizer No. 2 (Sulphate Potash).	536	.....	.....	.....	.....	.....	47 24	A. P. DeWolf, Crescent City.
Fertilizer	537	.....	9.72	3.12	12.84	2.00	1.69	L. A. Adams, Luanna, Fla.
Fertilizer	538	.....	7.22	4.12	11.34	2.25	2.37	R. L. West, Plant City, Fla.
Rock Phosphate	539	.....	.....	.....	33.46	.....	.....	John D. Philips, Bailey, Fla.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	540	.....	5.28	1.38	6.66	3.48	7.84	S. P. Lamb, Anthony, Fla.
Cotton Seed Meal........	541	.....	.....	.....	2.29	6.78	1.71	J. E. Snow, East Lake, Fla.
Tobacco Ashes	542	.....	.....	.....	2.53	.....	12.12	James Holmes, Jensen, Fla.
Muck Soil	543	.....	.....	.....	0.39	1.61	Tr.	W. Lippencott, Lakeland, Fla.
Fertilizer	544	.....	7.60	9.05	15.05	3.41	12.36	L. C. Hefner, St. Petersburg, Fla.
Cotton Seed Meal	546	.....	.....	.....	.....	6.84	.....	Lewis Lively, Tallahassee, Fla.
Fertilizer	547	.....	11.08	2.67	13.75	2.82	1.87	Jas. B. Holmes, Jensen, Fla.
Wood Ashes	548	.....	.....	.....	.....	.....	0.68	Chase & Co., Sanford Fla.
Fertilizer	549	.....	7.94	1.86	9.80	5.28	17.02	S. B. Robinson, Seven Oaks, Fla.
Fertilizer	550	.....	10.55	0.61	11.16	1.85	2.58	A. W. Turner, Coe's Mills, Fla.
Fertilizer	551	.....	5.39	0.37	5.76	2.65	10.90	Horrace Prior, Como, Fla.
Fertilizer	552	.....	9.25	1.66	10.91	1.50	0.97	Alexander & Baird, Beresford, Fla
Fertilizer	553	15.33	7.31	.....	7.31	.....	2.61	C. C. Wills, Woods, Fla.
Bright Cotton Seed Meal.	554	.....	.....	.....	.....	7.57	.....	J. W. Scott, Quincy, Fla.
Dark Cotton Seed Meal..	555	.....	.....	.....	.....	6.82	.....	J. W. Scott, Quincy, Fla.

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT
			Available	Insoluble	Total			
Ashes	556	.....	.....	.....	1.08	.....	2.28	John J. Beers, Emporia, Fla.
Cotton Seed Meal	557	.....	.....	.....	2.44	6.77	1.73	J. W. Scott, Quincy, Fla.
Dissolved Animal Bone...	558	.....	9.86	5.85	15.71	2.67	.....	Florida Fert. Co., Gainesville.
Fertilizer	559	.....	7.22	0.36	7.58	4.36	5.91	Rome Tinny, Ozond, Fla.
Raw Bone Meal.........	560	.....	.....	.....	25.86	4.14	.....	Jas. B. Holmes, Jensen, Fla.

For values see heading "Bureau of Fertilizers."

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample' sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on followng pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a "Special Sample."

Special attention is called to the "Caution to Purchasers of Cotton Seed Meal" on another page. This adulterated meal is sold as bright or prime meal--though the guarantee is but 4½ per cent. of ammonia--it is evidently adulterated with rice hulls, its value is but little more than half that of prime meal.

DEPARTMENT OF AGRICULTURE, DIVISION OF CHEMISTRY.

R. E. ROSE, STATE CHEMIST, ANALYSIS OF FERTILIZERS, 1904, MARION G. DONK, ASSISTANT CHEMIST.

Samples taken by State Chemist under Section 1. Act approved May 22 1901.

NAME OF BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Cotton Seed Meal.......	311	**Guarant'd Analysis.**	......	......	......	......	7.35	......	Southern Cotton Oil Co., Washington, Ga.
		Official Analysis....	......	....	.	......	8.12	......	
Tobacco Dust...........	312	**Guarant'd Analysis.**	......	......	......	......	1.20	2.50	Tampa Fert Co, Tampa, Fla
		Official Analysis....	......	......	......	......	1.38	2.80	
Hard Wood Ashes......	313	**Guarant'd Analysis.**	......	......	......	......	......	5.50	Blackshear Manufa'g Co., Blackshear, Ga.
		Official Analysis....	......	......	......	......	......	4.60	
H. G. Dissolved Bone Black................	314	**Guarant'd Analysis.**	10.00	16.00	......	......	......	......	Armour Fert. Co., Jacksonville.
		Official Analysis....	11.30	20.26	0.29	20.55	......	......	
Acid Phosphate.........	315	**Guarant'd Analysis.**	......	14.00	......	......	......	......	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	13.90	13.76	0.35	13.90	......	......	

Steamed Bone Flour....	316	**Guarant'd Analysis.**	......	......	......	23.00	3.00	......	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	5.75	13.38	13.46	26.84	3.85	......	
H. G. Vegetable Manure.	317	**Guarant'd Analysis.**	10 00	5 00	2 00	.....	4 00	6 00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	12 10	7 64	2 05	9 69	4 16	5 98	
Fruit and Vine Manure.	318	**Guarant'd Analysis.**	8 00	6 00	1 00	......	2 00	12 00	Tampa Fert. Co , Tampa, Fla.
		Official Analysis....	8 95	8 31	0 64	8 95	2 42	11 09	
Ober's Fruit and Vine	319	**Guarant'd Analysis.**	11 00	6 00	2 00	......	2 50	10 00	Oberr & Sons, Baltimore, Md.
		Official Analysis....	6 95	8 93	1 54	10 47	3 27	9 36	
Ober's Vegetable Manure..................	320	**Guarant'd Analysis.**	14 00	6 00	1 00	......	5 00	6 00	Ober & Sons, Baltimore, Md.
		Official Analysis....	13 70	7 87	1 78	9 65	5 43	5 96	
Baugh's Special Orange Tree..................	321	**Guarant'd Analysis.**	12 00	5 00	2 00	......	2 00	10 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	6 20	8 18	1 97	10 15	2 39	9 69	
Baugh's Vegetable Manure.................	322	**Guarant'd Analysis.**	12 00	6 00	4 00	......	5 00	7 00	Baugh & Sons, Baltimore; Md.
		Official Analysis....	13 35	6 71	1 71	8 42	5 48	6 88	
Double Strength of Potash..................	323	**Guarant'd Analysis.**	10 00	5 00	2 00	......	1 50	10 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7 55	6 65	1 09	7 74	2 05	11 40	
Peruvian and Fish Guano......	324	**Guarant'd Analysis.**	10 00	5 00	1 00	......	4 50	5 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	8 35	6 22	2 44	8 66	4 92	6 58	
Potato Mixture.........	325	**Guarant'd Analysis.**	10 00	5 00	2 00	......	3 00	9 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7 90	4 99	2 53	7 52	3 79	8 23	

Peruvian & Fish Guano Double strength of Potash..............	326	**Guarant'd Analysis.**	......	5.00	1.00	......	4 50	10 00	Florida Fertilizer Co.,
		Official Analysis....	7.00	6.35	4.65	11.00	4.09	9 56	Gainesville, Fla.
Orange Tree Fertilizer..	327	**Guarant'd Analysis.**	9 00	5 00	2 00	......	3 00	10 00	Standard Fertilizer Co.,
		Official Analysis...	5 20	5 62	1 83	7 45	3 74	10 78	Gainesville, Fla.
Vegetable Fertiliz'r No 1	328	**Guarant'd Analysis.**	8 00	4 00	2 00	.....	4 50	5 00	Standard Fertilizer Co.,
		Official Analysis....	8 80	3 95	2 76	6 71	4 41	6 04	Gainesville, Fla.
Fish and Potash........	329	**Guarant'd Analysis.**	9 00	3 00	2 00	......	6 00	5 00	Standard Fertilizer Co.,
		Official Analysis....	9 90	3 19	1 29	4 48	6 35	6 66	Gainesville, Fla.
Bean Special...........	330	**Guarant'd Analysis.**	8 00	4 00	3 00	......	3 50	8 00	Standard Fertilizer Co.,
		Official Analysis....	4 90	4 24	3 04	7 28	4 61	7 85	Gainesville, Fla.
Cuke Special...........	331	**Guarant'd Analysis.**	9 00	3 50	2 00	......	4 00	8 00	Standard Fertilizer Co.,
		Official Analysis....	4 75	3 15	2 21	5 36	4 24	8 52	Gainesville, Fla.
Early Trucker..........	332	**Guarant'd Analysis.**	7 00	4 00	2 00	.....	5 00	5 00	Standard Fertilizer Co.,
		Official Analysis....	6 80	3 52	1 98	5 50	5 43	5 09	Gainesville, Fla.
Lettuce Special.........	333	**Guarant'd Analysis.**	9 00	4 00	2 00	......	6 00	6 00	Standard Fertilizer Co.,
		Official Analysis....	4 95	4 74	2 81	7 28	6 06	6 99	Gainesville, Fla
Strawberry Special Fertilizer	334	**Guarant'd Analysis.**	8 00	6 00	......	......	3 00	5 00	Va.-Car. Chem. Co., Sa-
		Official Analysis....	9 80	5 91	2 22	8 13	3 98	5 14	vannah, Ga.

Champion Citrus Compound..........	335	Guarant'd Analysis.	10 00	6 00	......	......	3 00	14 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 25	5 86	0 92	6 77	4 03	11 50	
Old Dominion Potato Manure..........	336	Guarant'd Analysis.	8 00	7 00	.....	......	5 00	8 00	Va.-Car. Chem. Co., Savannah Ga.
		Official Analysis....	14 50	5 37	1 16	6 51	5 09	8 42	
Special Vegetable Grower..........	337	Guarant'd Analysis.	8 00	8 00	.....	......	3 00	3 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 12	8 28	1 80	10 08	3 01	3 06	
Tiptop Tomato Trucker.	338	Guarant'd Analysis.	8 00	7 00	......	.....	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 55	7 23	1 70	8 93	4 59	5 16	
Fruit and Vine..........	339	Guarant'd Analysis.	8 00	6 00		......	2 50	10 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 35	5 88	1 03	6 91	3 09	9 81	
Southern States Special.	340	Guarant'd Analysis.	......	6 00	......	......	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 65	8 49	1 53	10 02	3 59	5 98	
Cotton Seed Meal.......	341	Guarant'd Analysis.	......	.....	......	2 50	8 00	1 50	Southern Cotton Oil Co., Pensacola.
		Official Analysis...	....	....	......	......	8 68	......	
Sterns Ammoniated Raw Bone..........	342	Guarant'd Analysis.	15 00	8 00	1 00	......	2 00	2 00	Standard Guano & Chem. M'f'g. Co., New Orleans.
		Official Analysis....	15 75	9 47	2 06	11 53	2 10	1 48	
Baltimore Soluable Bone..........	343	Guarant'd Analysis.	15 00	10 00	1 00	......	1 00	1 00	Georgia Chemical Co., Augusta, Ga.
		Official Analysis....	14 95	10 32	3 70	14 11	1 47	1 11	
Cumberland Standard Fertilizers..........	344	Guarant'd Analysis.	14 00	8 00	1 00	......	2 00	2 00	Mutual Fertilizer Co., Savannah.
		Official Analysis....	13 40	8 65	0 53	9 17	1 98	1 97	

Scotts H. G. Acid Phosphate	345	Guarant'd Analysis.	12 00	14 00	2 00	.....	......	......	Va.-Car. Chem. Co., Montgomery, Ala.
		Official Analysis....	14 00	15 27	1 84	17 11	......	......	
Champion Farmers' Choice	346	Guarant'd Analysis.	15 00	8 00	1 00	.....	2 00	2 00	Standard Guano & Chem. M'f'g. Co., New Orleans.
		Official Analysis....	11 70	9 3[illegible]	1 25	10 63	2 37	2 77	
Vegetable Compound	347	Guarant'd Analysis.	16 00	7 00	1 00	.....	4 00	4 00	Goulding Fertilizer Co., Pensacola.
		Official Analysis....	14 05	9 82	1 93	11 75	2 51	4 52	
Baltimore Soluble Bone	348	Guarant'd Analysis.	15 00	10 00	1 00	.....	1 00	1 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	13 75	10 06	2 03	12 14	0 84	0 93	
Bone and Potash	349	Guarant'd Analysis.	15 00	10 00	1 00	......	......	2 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	12 30	10 82	2 57	13 39	......	1 84	
H. G. Acid Phosphate	350	Guarant'd Analysis.	16 00	15 00	1 00	.....	.....	......	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	13 20	16 92	0 43	17 35	.....	......	
Hard Wood Ashes	351	Guarant'd Analysis.	......	......	....	.....	......	5 50	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	....	......	......	.....	......	5 06	
H. G. Sulphate of Potash	352	Guarant'd Analysis.	......	......	......	......	......	50 00	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	...	......	......	.....	......	50 28	
Acid Phosphat	353	Guarant'd Analysis.	....	14 00	......	.....	......	......	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	14 25	14 75	1 02	15 47	......	......	
Sulphate of Ammonia	354	Guarant'd Analysis.	......	....	......	.....	24 00	......	Manatee Fertilizer Co., Palmetto, Fla.
		Official Analysis....	......	......	......	.....	25.09	......	

Vegetable Fertilizer.....	355	Guarant'd Analysis.	10.00	5.00	2 00	.....	4.00	6 00	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	12 40	5 48	2 76	8.24	4 18	7 05	
Fruit and Vine No. 1....	356	Guarant'd Analysis.	8 00	6 00	1 00	......	2 00	12 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	8 70	7 13	2 51	9 64	2 97	12 38	
H. G. Sulphate of Potash	357	Guarant'd Analysis.	......	..	......	......	......	49 00	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	.....	......	......	......	...	49 08	
Fruit and Vine..........	358	Guarant'd Analysis.	8 00	6 00	1 00	......	2 00	12 00	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	10 20	6 96	2 26	9 22	2 29	11 88	
Baugh's Vegetable Manure..................	359	Guarant'd Analysis.	12 00	6 00	4 00	.....	5 00	7 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	9 85	7 62	1 45	9 07	4 91	7 60	
Dissolved Bone Black ..	.360	Guarant'd Analysis.	....	17 00	......	......	......	......	Baugh & Sons, Baltimore, Md.
		Official Analysis....	7 50	18 26	3 74	22 00	......	......	
H. G. Vegetable Fish Guano................	361	Guarant'd Analysis.	12.00	5 00	2 00	......	4 00	8 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	9 15	5 13	3 22	8 35	4 00	7 05	
Acid Phosphate.........	362	Guarant'd Analysis.	......	14 00	....		......	......	Manatee Fert. Co., Palmetto, Fla.
		Official Analysis....	9 35	15 47	2 34	17 81	......	......	
Blood and Bone.........	363	Guarant'd Analysis.	......	6 00	8 00	......	6 50	.....	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	10 00	5 71	9 79	15 50	6 58	......	
Blood Bone and Potash.	364	Guarant'd Analysis.	8 00	6 00	3 00	......	4 00	4 00	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	10 90	6 26	3 17	9 43	3 93	4 20	

Orange Tree Special....	365	Guarant'd Analysis.	12 00	6 00	2 00	....	2 50	12 00	Manatee Fert. Co., Paltimore, Md.
		Official Analysis....	7 80	7 57	0 38	7 95	2 27	13 65	
Dark Cotton Seed Meal	365	Guarant'd Analysis.	12 00	....	....	....	5 00	....	Florida Mn'fg Co., Madison, Fla.
		Official Analysis ...	....	....	....	....	4 89	....	
H. G. Sulphate of Potash	367	Guarant'd Analysis.	....	..		....	....	49 00	Manatee Fert. Co., Palmetto, Fla.
		Official Analysis....	....	....	....	....	....	49 72	
L. G. Sulphate of Potash	368	Guarant'd Analysis.	....	....	....	....	....	27 00	Manatee Fert. Co., Palmetto, Fla
		Official Analysis....	....	....		....	....	25 86	
Cotton Seed Meal	369	Guarant'd Analysis.	....	....	....	....	8 00	....	H. E. Bridges, Memphis, Tenn,
		Official Analysis....	....	....	....		8 25	....	
Cotton Seed Meal.......	370	Guarant'd Analysis.	7 05	....	....	2 40	8 00	1 76	Abbeville Cotton Oil Co., Abbeville, Fla,
		Official Analysis....	....	....	....	....	8 51	....	
H. G. Sulphate of Potash	371	Guarant'd Analysis.	8 00	....	....	....	....	49 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	....	....	....		....	48 52	
Simon Pure Pine Apple	372	Guarant'd Analysis.	8 00	4 00	1 00	....	4 00	6 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	7 90	5 75	1 89	7 55	3 80	7 01	
Simon Pure Tomato....	373	Guarant'd Analysis.	12·00	4 00	2 00	....	5 00	9 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	8 85	5 28	1 48	6 76	6 50	10 48	
H. G, Blood, Bone and Potash..............	374	Guarant'd Analysis.	....	....	...	..	7 00	10 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	6 10	2 21	1 61	3 83	7 91	10 11	

Gem Bean Fertilizer.....	375	**Guarant'd Analysis.**	......	6.50	......	.....	5.00	2.00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	8.00	5 00	2.91	7.91	5 10	3 26	
Special Mixture No, 1...	376	**Guarant'd Analysis.**	8 00	6 00	1 00	......	5 00	5 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	9 50	5 95	0 96	6 91	5 23	5 95	
Ideal Fertilizer........	377	**Guarant'd Analysis.**	8 00	5 00	1 00		4 00	6 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	9 20	6 15	0 95	7 11	3 63	8 26	
Mape's Fruit and Vine Manure..............	378	**Guarant'd Analysis.**	10 00	5 00	2 00	......	2 00	10 00	Mape's Formula & P. G. Co., New York
		Official Analysis....	15 95	5 44	2 57	8 01	2 50	11 05	
Mape's Vegetable Manure................	379	**Guarant'd Analysis.**	12 00	6 00	2 00	.....	5 00	4 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	15 25	6 40	2 49	8.89	4 86	5 95	
Mape's Orange Tree Manure.................	380	**Guarant'd Analysis.**	12 00	6 00	2 00	.....	4 00	3 00	Mape's Formula & P. G. Co,, New York.
		Official Analysis....	15 95	6 93	3 40	10 33	4 17	4 09	
Bradley's Fruit and Vine Fertilizer	381	**Guarant'd Analysis.**	13 00	5 50	1 00	......	2 25	10 00	American Ag'l & Chem. Co., New York.
		Official Analysis....	7 95	6 71	2 44	9 15	2 58	10 15	
Baugh's Fruit and Vine Manure.............	382	**Guarant'd Analysis.**	12 00	5 00	2 00	......	2 00	15 00	Baugh & Son, Baltimore, Md.
		Official Analysis....	6 75	7 23	3 16	10 39	2 12	14 38	
Bradley's Vegetable Fertilizer............	383	**Guarant'd Analysis.**	13 00	6 00	1 00	.....	4 00	5 00	American Ag'l & Chem. Co., New York
		Official Analysis....	10 60	7 77	2 50	10 27	4 00	5 19	
Bradley's Nursery Stock	384	**Guarant'd Analysis.**	13 00	8 00	1 00	.....	4 50	3 00	American Ag'l & Chem. Co., New York.
		Official Analysis....	12 50	8 66	2 95	11 61	4 22	2 92	

Fruit and Vine..........	385	**Guarant'd Analysis.**	8 00	6 00	1 00	......	2 50	10 00	Va.-Carolina Chem, Co,
		Official Analysis....	7 60	6 22	0 33	6 55	2 68	8 73	Savannah, Ga.
Special Fruit and Vine..	386	**Guarant'd Analysis.**	10 00	6 00	1 00	......	4 00	13 00	Willson & Toomer Fert.
		Official Analysis....	5 10	6 59	0 36	6 95	4 70	13 70	Co., Jacksonville.
Cotton Seed Meal.......	387	**Guarant'd Analysis.**	...	......		2 50	7 50	1 50	W. A. Brode & Co., Memphis, Tenn.
		Official Analysis....	......	......	......	3 13	8 15	1 83	
Cotton Seed Meal.......	388	**Guarant'd Analysis.**	......	......	......	2 00	7 50	1 00	A. A. Smith, Atlanta, Ga.
		Official Analysis....	......	......	......	3 08	7 58	1 92	

PART IV.

MISCELLANEOUS.

Pure Food Laws.

The pure food laws of the State are in such demand by manufacturers and others, that we herewith publish all that are in force:

Section 2659, Revised Statutes. Selling Unwholesome Provisions.—Whoever knowingly sells any kind of deseased, corrupted or unwholesome provisions, whether for meat or drink, without making the same fully known to the buyer, shall be punished by imprisonment not exceeding six months, or by fine not exceeding two hundred dollars.

Section 2660, Revised Statutes. Adulterating Bread, Etc.—Whoever fraudulently adulterates, for the purpose of sale, bread or any other substance intended for food, with any substance injurious to health, shall be punished by imprisonment not exceeding one year, or by fine not exceeding three hundred dollars; and the articles so adulterated shall be forfeited and destroyed under the direction of court.

Section 2662, Revised Statutes. Selling Oleomargarine.—Whoever knowingly and willfully sells or causes to be sold as butter any spurious preparation purporting to be butter, whether known as oleomargarine or by any other name, shall be punished by imprisonment not exceeding thirty days, or by fine not exceeding one hundred dollars.

Section 2663, Revised Statutes. Hotel Keeper Supplying Same.—Any keeper of any hotel or boarding house who shall knowingly and willfully, without giving notice to guests at the table, supply oleomargarine or other spurious preparation purporting to be butter for the use of guests, shall be subject to the same penalty.

Chapter 4546—(No. 32.)

AN ACT to Prevent the Adulteration of Candy.

Be it Enacted by the Legislature of the State of Florida:

Section 1. No person shall by himself, his servant or agent, or as the servant or agent of any other person or corporation, manufacture for sale, or knowingly sell or offer to sell any candy adulterated by the admixture of terra alba, barytes, talc or any other mineral substance, by poisonous colors or flavors or other ingredients deleterious or detrimental to health.

Sec. 2. Whoever violates any of the provisions of this act shall be punished by a fine not exceeding one hundred dollars ($100.00) nor less than fifty dollars ($50.00.) The candy so adulterated shall be forfeited and destroyed under direction of the court.

Sec. 3. This act shall take effect upn its passage and approval by the Governor.

Approved June 4, 1897.

Chapter 5170—[No. 65.]

AN ACT to Prevent the Adulteration of Food and Drugs, and to Provide a Penalty for the Violation of this Act.

Be it Enacted by the Legislature of the State of Florida:

Section 1. That no person shall mix, color, stain or powder, or order, or permit any other person to mix, color, stain, or powder, any article of food or drugs with any ingredient or material so as to render the article injurious to health, or manufacture any article of food which shall be composed in whole or in part of diseased, decomposed, offensive, or unclean animal or vegetable substance with the intent that the same may be sold in the said State, and no person shall sell any such article so mixed, colored, stained powdered, or manufactured.

Any person violating this section shall be guilty of a misdemeanor, and for each offense be fined not exceeding two hundred dollars for the first offense, and for each subsequent offense not exceeding three hundred dollars, or imprisonment not exceeding one year, or both, in the discretion of the court.

Sec. 2. Quality and Potency of Drugs.—That no person shall, except for the purpose of compounding as hereinafter described, mix, color, stain, or powder or order or permit any other person to mix, color, stain or powder, any drug with any ingredient or material so as to affect injuriously the quality or potency of such drug, with intent that the same may be sold in said State, and no person shall sell any such drug so mixed, colored, stained, or powdered, under the same penalty in each case respectively as in the preceding section for a first and subsequent offense.

Sec. 3. Ignorance of Adulteration.—That no person shall be liable to be convicted under either of the two last foregoing sections of this act in respect of the sale of any article of food, or of any drug, if he shows to the satisfaction of the court before whom he is charged that he did not know of the article or drug sold by him being so mixed, colored, stained, or powdered, as in either of those sections mentioned, and that he could not, with reasonable diligence, have obtained that knowledge.

Sec. 4. Fraudulent Additions or Adulterations.—That no person shall sell any article of food or drug which is not of the nature, substance, and quality of the article as represented by the vendor, and any person violating this section shall be guilty of a misdemeanor, and for the first offense be fined not exceeding fifty dollars, and for each subsequent offense not exceeding one hundred dollors, or imprisonment not exceeding six months, or both, in the discretion of the court; Provided, That an offense shall not be deemed to be committed under this section in the following cases, that is to say:

First. Where any matter or ingredient not injurious to health has been added to the food or drug because the same is required for the production or preparation thereof as an article of commerce, in a state fit for carriage or consumption, and not fraudulently to increase the bulk, weight, or measure of the food or drug, or conceal the inferior quality thereof.

Second. Where the drug or food is a proprietary medicine.

Third. Where the food or drug is compounded as authorized by this act.

Fourth. Where the food or drug is unavoidably mixed with some extraneous matter in the process of collection or preparation.

Sec. 5. Ingredients must be in accordance with purchaser's demand.

That n operson shall sell any compound article of food or compounded drug which is not composed of ingredients in accordance with the demand of the purchaser.

Any person violating this section shall be guilty of a misdemeanor and fined not exceeding fifty dollars; Provided, That no person shall be guilty of any such offense as aforesaid in respect of the sale of an article of food or a drug mixed with any matter or ingredient not injurious to health, and not intended, fraudulently, to increase in bulk, weight, or measure, or conceal its inferior quality, if at the time of delivering such article or drug he shall supply to the person receiving the same a notice, by a label, distinctly and legibly written or printed on or with the article or drug, to the effect that the same is mixed.

Sec. 6. Subtraction of Ingredients.—That no person shall, with the intent that the same may be sold in its altered state without notice, subtract from any article of food any part of it so as to affect injuriously its quality, substance or nature, and no person shall sell any article so altered without making disclosure of the alteration, and any person violating the provisions of this section shall be guilty of a misdemeanor and fined not exceeding one hundred dollars.

Sec. 7. must prove conditions under proviso, (Sec. 5). That in any prosecution under this act, where the fact of an article having been sold in a mixed state has been proved, if the defendant shall desire to reply upon proviso contained in this act, it shall be incumbent upon him to prove the same.

Sec. 8. Dealer Ignorant of Adulteration.—That if the defendant in any prosecution under this act prove to the satisfaction of the court that he had purchased the article in question as the same in nature, substance, and quality as that demanded of him by the purchaser, and with a written warranty to that effect; that he had no reason to believe at the time when he sold it that the article was otherwise; and that he sold it in the same state as when he purchased it, he shall be discharged from the prosecution.

Sec. 9. Forging of Warranty.—That any person who shall forge, or shall use, knowing it to be forged, any certificate or any writing purporting to contain a warranty, as provided in section eight of this act, shall be guilty of a misdemeanor and be punishable, on conviction, by imprisonment for a term not exceeding one year with hard labor.

Sec. 10. False or Misapplied Warranties.—That every person who shall wilfully apply to any article of food or a drug a certificate or warranty given in relation to any other article or drug, or who shall give a false warranty in writing to any purchaser in respect of an article of food or drug sold by him as principal agent, or who shall wilfully give a label with any article sold by him which shall falsely describe the article sold, shall be guilty of a misdemeanor, and on conviction be fined not to exceed one hundred dollars.

Sec. 11. Chemist.—That the analysis provided for in this act shall be under the control of the Commissioner of Agriculture under such rules and regulations as he may prescribe.

Sec. 12. Demands for Aanlysis.—That any purchaser of an article of food or of a drug shall be entitled to have such article analyzed by such analyist, and to receive from him a certificate of the result of his analysis. And any health officer, inspector of nuisances, or any food inspector may procure any sample of food or drug, and if he suspects the same to have been sold to him contrary to any provision of this act, he shall submit the same to the Commissioner of Agriculture to be analyzed, who shall with all convenient speed cause such analysis to be made and give a certificate to such officer, wherein he shall specify the result of the analysis.

Sec. 13. Purchase of Samples for Analysis.—That if any officer mentioned in Section 12 of this act shall apply to purchase any article of food or any drug exposed to sale or on sale by retail on any premises, or in any shop or store, and shall tender the price for the quantity which he shall require for the purpose of analysis, not being more than shall be reasonable requisite, and the person exposing the same for sale shall refuse to sell the same to such officer, such officer shall have the right to enter the premises where the same shall be so exposed for sale and seize and take into his possession a sufficient quantity of any such food or drug, and shall keep same for the purpose of analysis.

Sec. 14. Definitions.—That the term "food," as used in this act shall include every article used for food or drink by man other than drugs and water. The term "drug," as used in this act, shall include all medicines for internal and external use.

Sec. 15. Exemption of Certain Articles.—That the Commissioner of Agriculture may from time to time declare certain articles or preparations to be exempt from the provisions of this act; and it shall be the duty of the Commissioners to prepare and publish from time to time a list of the articles, mixtures, or compounds declared to be exempt from the provisions of this act, in accordance with this section.

Sec. 16. Previous Legislation.—That all acts and parts of acts inconsistent with this act be, and the same are hereby repealed.

Approved June 5, 1903.

CHAPTER 5231—[No. 126.]

AN ACT to Regulate the Sale of Certain Syrups and Adulterations Thereof Within this State, and for Other Purposes.

Be it Enacted by the Legislature of the State of Florida:

Section 1. That from and after September 1st, 1903, it shall be unlawful for any person or persons, firm or corporation, or agent thereof, to sell, advertise for sale, or offer for sale, within the limits of this State, any adulterated or mixed syrups whatever; except at the time of sale or offer for sale the percentage of such adulteration or mixture is clearly stamped or labeled on the barrel, can, case bottle or other receptacle containing such syrup. The terms adulterated "mixture" or "admixture," as used in this act is understood to apply to all mixtures of two or more ingredients differing in their nature and quality, such as sugar cane syrup, sorgham syrup, maple syrup, molasses or glucose.

Sec. 2. That all packages of adulterated or mixed syrups in barrels or other receptacles, shall bear the name and postoffice address of the manufacturer or manufacturers.

Sec. 3, All persons, firms, or corporations, or agents, thereof, found guilty of a violation of this act, shall be guilty of a misdemeanor, and shall be punished for each offence in a sum not exceeding $500, or imprisonment in the county jail for a term not exceeding six months, or both, at the discretion of the court.

Sec. 4. All laws and parts of laws in conflict with this act be and the same are hereby repealed.

Approved June 4, 1903.

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VOLUME 14
NUMBER 5

FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

JULY 1. 1904

B. E. McLIN
COMMISSIONER OF AGRICULTURE.
TALLAHASSEE, FLORIDA.

Part 1—Crops. Part 2—Weather Report,
Part 3—Fertilizers. Part 4—Miscellaneous.

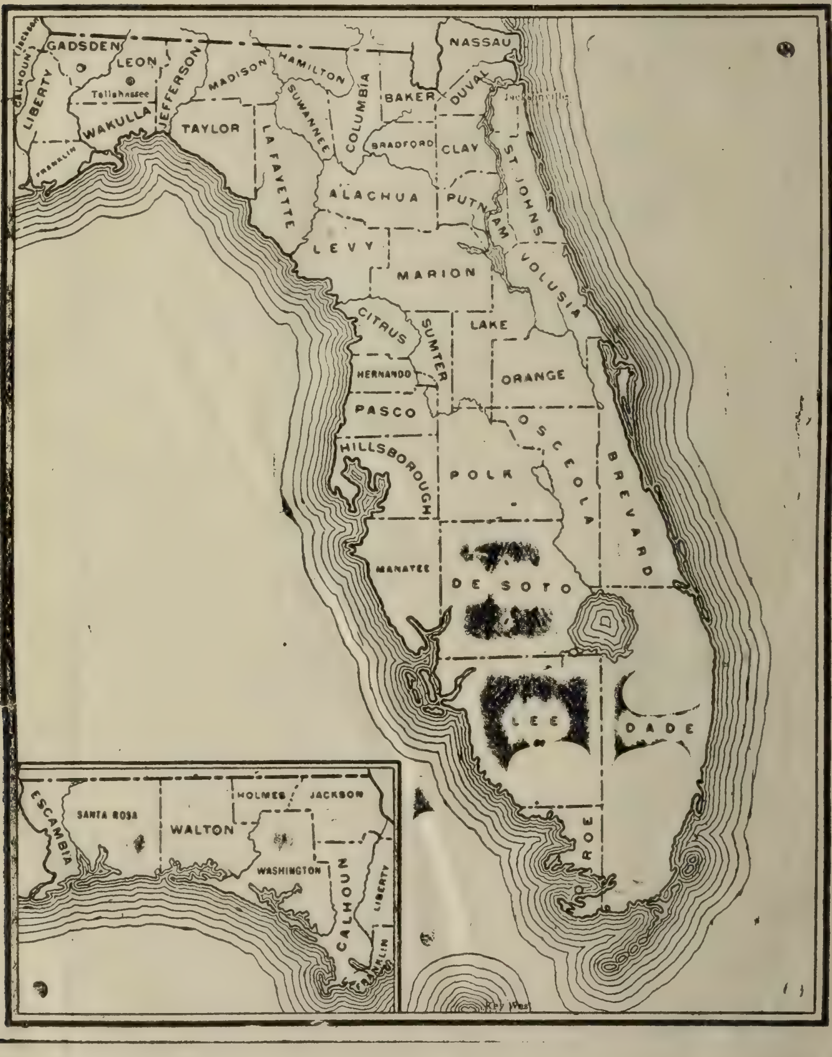
Entered January 31, 1903, at Tallahassee. Florida as second-class matter, under Act of Congress. of June, 1900.

These Bulletins are Issued free to those requesting them.

TALLAHASSEE, FLA..
I. B. HILSON, STATE PRINTER.

County Map of the State of Florida.

(For the Bulletin.)



PART I.

CROPS.

DEPARTMENT OF AGRICULTURE.

B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

Alachua County.—We are having light rains but they are too light to set out sweet potatoes. Crops are very backward and corn will be a short crop unless it rains soon; cotton that is growing is in fair condition; stands are bad on account of dry weather; so dry grass could not make headway.

Bradford County.—With the exception of a little bad stand in cotton caused by late planting and dry spring, the prospects for all crops were never better, and the seasons at this time were never more favorable.

Brevard County.—The condition of citrus fruits is better than since 1895, and the crop will be larger than last; rain is plentiful, none too much, summer cool and no mosquitos. Insect pests on fruit trees, are less than usual.

Calhoun County.—Since last report we have had one very good season which will enable the corn to make a good crop if we can have rain from now on. It has been so dry that peach trees in full fruit have died for want of water; cotton has stood the drought well, but needs rain very much.

Citrus County.—The extreme dry weather has seriously affected the watermelon crop; everything else has held up well and since the rains have fallen, have almost entirely recovered.

Clay County.—Crops have greatly improved since the rains began to fall, and most of them have recovered. The peach and melon crops are fine.

Columbia County.—Since the rain, all crops except the early corn, are recovering from the effects of the drought; cotton is small but healthy; peanut crop promises to be the best for some years; sweet potatoes have not growth enough yet to tell.

DADE COUNTY.—We are having abundant rains and fine growing weather for citrus and tropical fruits. Trees are in fine condition and fruit doing well; pineapple crop not so large as last year.

ESCAMBIA COUNTY.—Seasons have been extra good so far. The season now on from present rains, will complete corn crop; cotton is by far the best ever seen at this season of the year; had blooms on the 15th; sugar cane is fine too.

FRANKLIN COUNTY.—The weather is very dry, and unless it rains soon all crops will be greatly damaged; they are barely holding their own.

GADSDEN COUNTY.—The condition of all crops where we have stands is good, but on account of excessive and continued dry weather since February, stands are poor, the growth is small, and prospective yield of everything is small unless we have ample and general rain fall very soon.

HAMILTON COUNTY.—Crops are all very backward and cotton plant small on account of the long continued dry weather; corn and cotton will both be short, in fact all crops are suffering very much for rain.

HOLMES COUNTY.—There has been the least rain up to the last day of June ever known; it has greatly hindered the transplanting of tobacco and sweet potatoes; crops have stood the drought wonderfully well.

JEFFERSON COUNTY.—The general average of crops in this county is fine; some have suffered from the long drought very much but considering the long dry spell, they are all doing well.

LAFAYETTE COUNTY.—Considering the long dry spell, the crops are doing very well; corn will be a short crop, and cotton is small; sugar cane and sweet potatoes are short, and it is getting too late to plant sweet pototoes to yield much.

LAKE COUNTY.—Orange and grape fruit trees growing well; all crops looking well except corn; has been too dry for its growth till the last two weeks, since which time we are having plenty of rain.

LEON COUNTY.—The crops of this county have lost very much by dry weather; only two rains of consequence since February; cotton small and stands poor; corn crops very short; and seasons for transplanting sweet potatoes the poorest in many years.

LEVY COUNTY.—The long drought has cut corn and some other crops very short. We are having the worst drought for a long time.

MADISON COUNTY.—Cotton is small but in very good condition; corn is short on account of dry weather, sweet potatoes and field peas the same; pears and peaches are medium only; watermelons good crop, also contaloupes.

MANATEE COUNTY.—We have had some rain, but not enough to recover entirely from the drought; some crops are very good and some are poor; fruit crops need rain also.

NASSAU COUNTY.—Dry weather kept crops back till the late rains revived them, and they will now give a fair yield. Fruit crops promise a good yield.

OSCEOLA COUNTY.—We are having frequent showers, but they are very light, sweet potato planting commenced; crops are backward for want of rain; fruit trees need rain badly.

PASCO COUNTY.—The long continued drought has been very injurious to crops of all sorts; all crops need rain, and fruit trees also. Some crops will be short in yield.

POLK COUNTY.—Drought kept all crops back and damaged corn and other crops some, but since the rain began the prospect is very good for aa average yield of crops generally.

SANTA ROSA COUNTY.—Crops are generally in good condition and the season favorable for growing; sweet potatoes are being set out. Pears only about half a crop but peach and melon crops are fine. Field crops good.

SUMTER COUNTY.—Crops are not up to the usual standard at this time of the year; the long dry spell of weather has made them grow slow, and few of them will yield full crops. Fruit trees and fruit are only medium.

SUWANNEE COUNTY.—It has been very dry in some sections and there crops have suffered for rain to some extent; light rains are frequent and as this is the usual time for our rainy season perhaps they will continue; crops will average very good; the peach and melon crops are also good.

WAKULLA COUNTY.—It is too dry for any crop to make satisfactory growth; conditions are very poor.

WASHINGTON COUNTY.—Crops are in fair condition considering the unfavorable seasons; the long drought has made them all very backward, specially corn; cotton has stood the drought well; average condition of crops is good; melon crops are also good.

REPORT OF CONDITION AND PROSPECTIVE YIELD OF FIELD AND FRUIT CROPS FOR JUNE, 1904, AS COMPARED WITH AN AVERAGE.

COUNTIES	Upland Cotton	Sea Isla'd Cotton	Corn	Sugar Cane	Rice	Sweet Potatoes	Field Peas	Cassava	Broom Corn	Egg Plant	Peanuts	Hay
	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition	Condition
Alachua....	...	80	90	50	..	50	50	...	....	70	75	50
Baker... ..	...	85	80	60	60	75	60	...	....	...	....	....
Bradford ..	...	100	100	90	95	90	100	...	...	...	100	100
Brevard...	...	....	...	100	...	100	...	100	....	...	....	....
Calhoun...	100	100	100	75	75	75	100	....	....	....	...	....
Citrus.....	...	....	95	90	...	100	110	...	...	...	95	105
Clay.......	...	100	120	100	100	110	100	100	...	...	120	....
Columbia..	...	100	100	100	100	90	100		....	...	100	90
Dade	...	..	...	....	...	100	100	...	...	...	.	....
DeSoto.....	....	....	95	90	95	95	100	100	100	90	90	100
Escambia..	100	....	125	120	100	120	120	100	100	100	120	120
Franklin...	...	....	90	...	...	....	90	....	...	...	75	....
Gadsden...	100	100	100	100	100	40	60	....	...	...	75	40
Hamilton..	...	60	60	75	50	40	60	....	...	...	60	60
Hernando..	....	....	80	120	...	....	..	....	....	...	....	....
Hillsboro..	...	....	105	100	...	....	105	95	....	...	...	100
Holmes....	85	....	100	100	90	80	100	....	....	...	95	....
Jackson ..	90	100	90	75	...	50	80		...	...	100	90
Jefferson ..	100	100	100	100	...	70	100	100	....	100	·100	75
LaFayette.	....	90	60	70	...	40	100	.	....	....	..	....
Lake.......	....	....	75	90	....	75	50	25	...	.	...	75
Lee.......	...	....	125	110	100	125	100	100	100	120	100	120
Leon......	90	....	75	90	...	70	90	....	....	....	90	60
Levy.......	....	90	80	75	100	80	100	100	....	....	100	100
Madison...	100	100	95	110	90	50	50	....	....	....	100	....
Manatee...	...	....	100	100	100	50	50	100	....	....	...	100
Marion....	90	90	85	90	80	60	95	85	....	75	90	80
Nassau....	....	....	100	100	....	90	...	....	....	....	....	100
Osceola...	....	....	80	100	100	100	100	100	....	40	100	110
Pasco	...	....	80	100	100	100	100	80	....	....	....	....
Polk.......	....	...	100	90	100	100	120	75	...	100	100	....
Santa Rosa	115	...	125	100	100	95		..	....	...	95	....
Sumter.....	....	90	85	90	.	90	80	....	....	.	90	90
Suwannee.	....	90	90	80	80	60	50	..	80	100	100	....
Wakulla...	75	40	60	50	...	50	...	..	....	....	....	....
Washin'ton	90	90	80	100	100	75	100	80	....	...	100	100
Gen'l av'ge per cent..	95	89	92	91	91	76	72	89	95	88	95	89

CONDITION OF CROPS—Continued.

COUNTIES	Velvet Beans	Guavas		Bananas		Orange Trees		Lemon Trees		Lime Trees	
	Condition	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	70	....	....	..	....	60	60	....	....	....	....
Baker	....	....	....	....	....	....	....	....	....	....	....
Bradford	80	....	....	....	....	....	....	....	....	....	....
Brevard	....	100	150	100	120	100	120	100	125	....	....
Calhoun	....	....	....	....	....	....	....	....	....	....	....
Citrus	95	....	....	....	....	100	100	....	....	....	....
Clay	110	....	....	....	....	....	....	....	....	....	....
Columbia	90	....	....	....	....	....	....	....	....	....	....
Dade	100	100	100	100	100	110	110	100	150	100	100
DeSoto	100	90	90	90	90	95	110	95	100	95	100
Escambia	120	...	....	....	....	....	....	....	....	....	....
Franklin	....	....	....	....	....	....	....	....	....	....	....
Gadsden	25	....	....	....	....	....	....	....	....	....	....
Hamilton	60	....	....	....	....	....	....	....	....	....	....
Hernando	200	....	....	....	....	....	....	....	....	....	....
Hillsboro	110	80	95	....	....	105	100	100	100	....	....
Holmes	....	....	....	....	....	....	....	....	....	....	....
Jackson	100	...	....	....	....	....	....	....	....	....	....
Jefferson	100	....	....	....	....	....	....	....	....	....	....
LaFayette	....	....	....	....	....	....	....	....	....	....	....
Lake	100	....	....	....	....	100	75	100	25	....	....
Lee	100	120	120	100	100	125	125	110	110	110	110
Leon	70	....	....	....	....	100	20	....	....	....	....
Levy	100	....	....	....	..	....	....	....	....	....	....
Madison	....	....	....	....	....	....	....	....	....	....	....
Manatee	50	80	50	100	100	80	75	80	75	80	75
Marion	90	....	....	....	....	100	100	100	80	100	75
Nassau	....	....	....	....	....	100	100	100	100	....	....
Osceola	125	100	100	50	70	95	50	95	50	95	50
Pasco	80	....	....	....	....	100	75	....	....	....	....
Polk	100	..	....	....	....	100	120	100	100	100	100
Santa Rosa	....	....	....	....	....	....	....	....	....	....	....
Sumter	60	....	....	....	....	35	50	....	....	....	....
Suwannee	70	..	....	....	....	....	....	....	....	....	....
Wakulla	....	....	....	....	....	....	....	....	....	....	....
Washin't'n	80	....	....	....	....	....	....	....	....	....	....
Gen'l av'ge per cent	92	96	101	90	97	94	87	98	92	97	87

CONDITION OF CROPS—Continued.

COUNTIES	Grape Fruit Trees		Tobacco		Tomatoes		Pears		Peaches	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	......	......	....	...	70	70	70	70	100	100
Baker	......	......	....	....	...	....	40	40	75	75
Bradford	......	......	....	....	....	....	100	100	100	100
Brevard	100	150	....	....	....	....	....	....	....	....
Calhoun	......	......	....	....	....	....	....	....	....	....
Citrus	100	100	....	....	100	100	100	95	100	100
Clay	......	......	....	....	100	100	80	80	120	125
Columbia	......	......	....	....	....	....	....	....	100	100
Dade	110	115	...	..	....	....	....	....	....	....
DeSoto	105	110	90	90	95	120	100	110	100	110
Escambia	......	......	100	100	100	100	....	....	100	140
Franklin	......	......	....	..	90	90	90	90	90	90
Gadsden	......	....	100	80	....	....	....	....	....	....
Hamilton	......	......	....	...	....	...	75	75	75	60
Hernando	......	......	....	....	...	...	60	60	100	120
Hillsboro	105	100	....	...	95	90	100	85	95	105
Holmes	......	.....	60	60	100	100	....	....	75	75
Jackson	......	......	....	....	...	...	50	50	90	90
Jefferson	......	......	....	....	70	75	75	75	100	100
LaFayette	......	......	...	....	..	..	....	....	75	75
Lake	100	75	....	....	...	...	50	50	100	100
Lee	120	125	100	100	100	100	110	110	100	100
Leon	......	......	100	110	100	100	35	30	100	100
Levy	......	......	....	....	90	90	90	90	80	80
Madison	......	......	....	....	60	60	25	25	50	50
Manatee	80	75	....	....	....	....	....	....	80	75
Marion	100	100	....	..	75	80	100	125	100	110
Nassau	......	......	....	....	100	100	125	125	....	....
Osceola	95	50	....	..	100	100	100	30	100	110
Pasco	100	75	....	....	....	....	....	....	....	....
Polk	100	100	....	...	100	100	100	100	100	100
Santa Rosa	......	......	....	....	..	...	50	50	95	85
Sumter	......	......	....	....	95	100	100	110	80	95
Suwannee	......	......	....	....	....	....	....	....	80	80
Wakulla	......	......	....	....	....	....	....	....	75	60
Washington	......	......	....	....	....	....	....	....	....	....
Gen'l av'ge per ecnt	101	98	92	90	91	93	79	77	91	93

CONDITION OF CROPS—Continued.

COUNTIES	Watermelons		Cantaloupes		Pineapples		Grapes	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	90	100	70	60	90	80		
Baker	60	60	60	60			75	75
Bradford	100	100					100	100
Brevard					100	75		
Calhoun	85	90						
Citrus	80	60						
Clay	100	100						
Columbia	90	95	90	95			100	100
Dade					90	75	100	100
DeSoto	100	110	100	150	95	100	100	110
Escambia	100	120	100	120			100	100
Franklin	90	90	90	90			100	100
Gadsden	75	80					100	100
Hamilton	60	60	60	60			75	75
Hernando							100	100
Hillsboro	90	95	105	105	100	100	100	90
Holmes	110	110	90	90			100	100
Jackson	50	50						
Jefferson	100	100	100	100				
LaFayette	100	100					100	100
Lake	50	50					75	75
Lee	110	110	100	100	110	110	100	100
Leon	90	90	90	90			75	90
Levy	80	80	60	60				
Madison	100	100	95	95				
Manatee	80	75	100	100	100	100	100	100
Marion	90	100	90	90			90	100
Nassau	100	100	100	100			100	150
Osceola	90	80	80	50	80	80	90	100
Pasco								
Polk	90	80	90	75	90	75	100	120
Santa Rosa	95	85	95	50			90	90
Sumter	90	100	75	90			60	75
Suwannee	100	100						
Wakulla	85	90						
Washington	100	100	90	90			100	100
Gen'l av'ge per cent	88	89	88	92	95	88	93	98

PART II.

WEATHER REPORT.

U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

Central Office: Washington, D. C.

FLORIDA SECTION:

A. J. MITCHELL, Section Director.,

JACKSONVILLE, FLA.

REPORT FOR MAY, 1904.

SALIENT CLIMATIC FEATURES.

ATMOSPHERIC PRESSURE.

	Inches.
Mean, as determined from records of 4 stations..	29.95
Departure from the normal, 4 records	+0.01
Highest observed, at Pensacola on the 11th......	30.15
Lowest observed, at Jacksonville on the 27th......	29.76
Absolute range for the State	0.39

TEMPERATURE.

	Degrees.
Mean, as determined from records of 64 stations..	74.9
Departure from the normal, 30 records...........	—2.7
Highest monthly mean, at Marco	78.6
Lowest monthly mean, at Middleburg and Molino..	70.8
Highest recorded, at Lake City on the 27th and Tarpon Springs on the 30th	100°
Lowest recorded, at Marianna and Molino on the 11th	44°
Absolute range for the State	56

PRECIPITATION.

	Inches.
Average, as determined from records of 60 stations	2.51
Departure from the normal, 28 records	–1.01

Greatest amount for any 24 hours, at Key West on the 19th	5.83
Greatest monthly amount, at Key West	13.01
Least monthly amount, at Lake City	0.30
Average number of days on which 0.01 or more fell	5

WIND.

Prevailing wind direction	East

WEATHER.

Average number of clear days	17
Average number of partly cloudy days	11
Average number of cloudy days	3

WEATHER AND CROPS

During May.

The month, as a whole, was unfavorable for the germination of seed and growth of plants. For the greatest portion of the time the temperature was lower than the normal, which, in conjunction with a deficiency in precipitation, resulted in a marked deterioration in most crops; more, especially, however, with those planted last. The early planted cotton pushed forward fairly well, although the cool nights caused many plants to die, and, as a consequence, stands were unsatisfactory. With regard to late planted cotton and corn, complaints of retarded germination were general. The condition was not so unsatisfactory on lowlands, where the soil was in a better condition. The absence of rain enabled farmers to push cultivation, and crops were kept free of grass. Much replanting of cotton tock place during the last of the month. At the close of May the most advanced cotton was about twelve inches high and fruiting nicely. Corn on lowlands was good, although the crop, as a whole, will be below the average. As a result of the drought, which, in some sections, exceeded six weeks, a large portion of the orange crop was lost. The cantaloupe crop was short, and the setting of sweet potato slips was delayed. The peach crop was large, but the fruit was generally small. Cane did fairly well, and the yield of vegetables was quite satisfactory; shipments began to decrease during the latted part of the month. The shipment of pineapples began during the last week of the month; this crop is materially cut off as a result of the drought. The monthly precipitation was greatest—exceeding 12 inches—on the southeast coast, and least in northern and central portions, where some counties had less than half an inch of rain.

COMPARATIVE TEMPERATURE AND RAINFALL DATA FOR MAY, WITH DEPARTURES FROM NORMAL, DURING THE PAST THIRTEEN YEARS.

Year	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Mean	75.3	76.3	74.6	75.0	74.7	74.0	76.4	78.2	75.5	75.1	77.7	73.7	74.9
Depar	−2.3	−1.8	−3.0	−1.7	+2.9	+3.6	−1.2	+0.0	−2.1	−2.5	plo.1	−3.9	−2.7
Total	2.10	8.02	2.51	4.40	2.78	2.25	1.60	1.22	3.52	4.38	2.46	5.36	2.51
Depar	−1.33	+0.40	−1.01	+0.94	−0.79	−1.27	−1.92	−2.30	+0.31	+0.86	−1.07	plo 80	−1.01

PRESSURE AND WIND TABLE.

STATIONS	Atmospheric Pressure					Wind Velocity in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville	29.97	30.15	12	29.76	17	6,559	44	s	31	93	48	74
Jupiter	29.95	30.04	25	29.84	8	7,404	30	w	17	98	51	77
Key West	29.94	30.02	25	29.81	7	6,018	32	sw	19	99	57	76
Pensacola	*30.09	30.15	11	29.81	8	7,583	35	sw	30	97	33	71
Tampa	29.95	30.09	13	29.82	7	4,109	24	ne	5	100	42	71

*8 a. m, reading only.

CLIMATOLOGICAL DATA FOR MAY, 1904.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Farh.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	
Northern Section.																			
Archer	Alachua	92	22	75 4	+0.4	195	28	150	1	156	1.21	—2.57	0.83	...	3	...	...	...	.....
Federal Point	Putnam	10	12	73.4	—0.5	96	28	51	1	32	1 41	—1.27	0.50	..	5	21	10	0	e.
Fernandina	Nassau	15	3	73.4	.....	95	28	57	1	26	2 50	.....	1.55	..	7	24	5	2	se.
Fort George†	Duval	15	19	75.1	+0 5	90	27	66	4*	...	.....	.....	...	...	...	...	...	...	ne.
Gainesville	Alachua	175	18	74 9	—0.7	95	28	63	1	33	0 88	—2.10	0 39	..	5	21	2	8	ne
Huntington	Putnam	50	8	73 1	—3.4	96	29	48	1	34	2 18	—1 00	0 90	...	5	18	13	0	ne.
Jacksonville	Duval	43	34	73.0	—1.9	92	28	59	16	22	2 90	—1.10	1.17	...	6	17	13	1	e.
Jasper	Hamilton	165	6	73.0	—2 5	96	28*	45	16	45	1 41	—1.78	0.74	...	5	19	4	8	w.
Johnstown	Bradford	125	9	c71.2	—4.7	c94	28	c49	12	c36	1.80	—0.50	0.87	...	3	...	...	...	.....
Lake City	Columbia	201	14	c74 4	—1.8	100	27	51	20	37	0 30	—2 54	0.30	...	1	7	23	1	ae.
Macclenny	Baker	140	9	73.2	—2.6	98	27*	49	2	42	1.34	—1 38	0 53	..	7	23	6	2	e.
Micanopy	Alachua	105	8	a76	—0.9	a98	28	a52	6	38	1 75	—2.19	1.00	..	3	...	...	...	.....
Middleburg	Clay	20	5	70.8	.....	97	28	50	14	37	3 68	.....	1.26	..	5	7	8	6	e.
Pinemount	Suwannee	103	2	o73.0	.....	a98	29	50	16	a37	3 17	.....	2.32	...	5	25	7	0	ne.
St Augustine	St. Johns	10	54	75.8	—0 0	94	27	53	1	29	1 57	—1.88	0.56	...	6	8	4	19	ne,
Sumner	Levy	23	14	75.0	—0.4	92	28*	47	1	39	0.47	—1.33	0.34	...	2	18	13	0	sw
Switzerland	St. Johns	...	8	e73.4	—2 3	h96	28	52	1	h31	0 39	—4.00	0.82	..	6	...	...	...	.....

CLIMATOLOGICAL DATA FOR MAY, 1904 —Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	Number clear days.	Number partly cloudy days	Number cloudy days	
Central Section.																			
Bartow	Polk	17	9	77.0	+1.2	95	27*	57	21	34	1.76	—0.81	0.89	...	7	17	14	0	sw.
Brooksville	Hernando	328	12	b75.6	—0.9	b96	29	b52	1	36	3.12	+0.14	1.20	...	3	...	.	...	e.
Clermont	Lake	110	12	78.1	+0.2	97	28	57	1	35	1.24	—1.76	0.60	...	6	6	25	0	e.
De Land	Volusia	32	4	74.0	.....	94	27*	53	1	33	.....	.....		...	...	24	7	0	e-ne.
Eustis	Lake	180	14	77.0	—0.1	96	27	57	1	32	1.69	—1.11	0.55	...	6	5	22	4	e.
Fort Mead	Polk	125	21	77.0	+1.7	97	23*	55	21	38	1.03	—2.89	0.37	...	3	27	4	0	e.
Fort Pierce	Brevard	25	13	75.3	—0.1	91	31	56	21*	29	3.24	—1.06	1.25	...	6	20	6	5	se,
Grasmere	Orange	175	8	76.4	+0.1	95	27*	56	1	32	...	.....	.....	...		22	9	0	sw.
Inverness	Citrus	43	4	b77.4	...	b98	28	c48	4	c42	0.89	.....	0.55	...	3	...	...	...	sw.
Kissimmee	Osceola	65	12	75.4	—2.6	94	27*	56	1	36	0.51	—2.47	0.25	...	4	13	16	2	se.
Malabar	Brevard	..	3	75.8	.....	91	31	56	21	30	1.51	.....	0.66	...	7	23	8	0	e-se
Merritt's Island	Brevard	20	23	76.5	+0.2	88	27	63	1	20	3.80	+0.23	2.89	...	4	26	2	3	ne.
New Smyrna	Volusia	20	16	c73.0	—1.8	c95	17*	c51	1	34	1.89	—0.78	0.85	...	3	...	...	...	e.
Ocala	Marion	150	17	76.0	+1.3	97	28	51	1	36	1.04	—1.87	0.75	...	4	14	15	2	e.
Orange City	Volusia	50	14	76.2	-0.5	99	30*	50	1	40	2.43	—0.40	1.49	...	3	...	...	...	se,
Orange Home	Sumter	75	...	76.1	.....	98	28	55	1*	37	1.28	.....	0.64	...	3	16	15	0	.....

CLIMATOLOGICAL DATA FOR MAY, 1904.—Continued.

STATIONS.	COUNTIES	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hour.	Total snowfall (un melted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	
Orlando	Orange	98	17	76.4	—0.2	90	27	56	1	35	2.16	—1.00	1.30	...	4	21	9	1	w.
Plant City	Hillsbor'gh	121	12	76.1	—0.1	97	28	50	1	39	3.95	—0.06	2.00	...	9	...	...	...	......
Rockwell	Marion		5	76.0		97	28*	52	1	35	0.84	......	0.70	...	2	14	17	0	sw.
St. Leo	Pasco	140	10	76.1	—2.2	96	28	56	1	34	1.51	—1.74	0.84	...	6	20	9	2	e.
Tampa	Hillsbor'gh	20	14	76.6	+1.1	94	28	62	1	27	4.17	+1.74	2.84	...	5	17	12	2	ne.
Tarpon Springs	Hillsbor'gh	20	20	77.0	+2.0	100	30	57	2*	37	0.66	......	0.41	...	2	18	10	3	ne.
Titusville	Brevard	11	13	75.2	+0.7	87	31	54	6	34	1.07	—3.23	0.43	...	6	4	15	12	e.
Southern Section.																			
Avon Park	De Soto	150	8	76.1	—0.5	94	31	58	21	30	3.82	—1.56	0.95	...	7	24	4	3	e.
Flamimgo	Monroe	11	4	77.0	...	88	30*	61	3	24	6.47	......	2.08	...	8	15	7	9	e.
Hypoluxo	Dade		8	76.4	—0.2	91	31	65	1*	22	3.58	—3.21	0.68	...	10	15	16	0	e.
Jupiter	Dade	28	17	77.3	+1.6	89	5	65	21	19	2.42	—2.87	0.77	...	14	6	21	4	e.
Key West	Monroe	22	34	77.5	—1.9	85	31	69	2	13	13.01	+9.85	5.83	...	12	13	13	5	e.
Manatee	Manatee	16	21	75.5	0.5	94	28	55	21	34	1.71	—1.57	0.88	...	6	20	10	1	nw.
Marco	Lee		4	78.6		94	11	66	2*	26	1.39	......	0.53	..	7	26	3	2	w.
Miami	Dade		8	78.0	—0.7	93	23	66	16	21	12.28	+6.16	4.60	...	10		...	.	ne-se.
Myers	Lee	19	21	76.0	—2.0	91	4*	60	2	26	3.57	+0.21	1.63	...	7	24	4	3	s.
Nocatee	De Soto	43	5	77.0	...	94	30	59	1*	30	4.16	......	1.65	...	6	8	16	7	e.

CLIMATOLOGICAL DATA FOR MAY, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches.					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Western Section.																			
Apalachicola	Franklin	...	...	g74.3	.....	g90	27	-58	11	g28	2.10	......	1.70	...	2	...	...	...	s.
Bonifay	Holmes	116	3	a73.4	.....	94	28	50	16	34	3.49	......	1.34	...	4	...	...	...	s.
Carrabelle	Franklin	12	9	73.8	—2.2	89	10*	50	1*	32	1.99	—0.69	1.26	...	2	26	0	5	sw.
DeFuniak Sp'gs	Walton	193	8	72.4	—1.7	93	22*	47	10*	38	4.29	+1.17	3.01	...	7	14	15	2	s.
Madison	Madison	...	...	73.4	.....	94	29	51	1	35	0.90	......	0.94	...	1	29	2	0	ew.
Marianna	Jackson	85	5	72.4	.....	97	28	44	11	45	1.84	......	0.76	...	4	20	9	2	sw.
Milton	Santa Rosa	...	...	.....	.....	...	...	...	...	.	......	......	.....	...	...	...	...	...	.....
Molino	Escambia	49	1	70.8	.....	98	28	44	11	47	2.63	......	0.85	...	4	19	3	9	s.
Monticello	Jefferson	207	...	73.1	.....	95	28	53	1*	33	4.04	......	1.87	...	5	16	15	0	e.
Pensacola	Escambia	56	25	72.8	—0.8	98	22	58	19	22	1.03	—2.30	0.53	...	8	19	11	1	ne.
Quincy	Gadsden	260	4	.....	.....	...	...	...	...	...	......	......	.....	...	...	...	...	...	...
St. Andrew	Washington	12	7	72.0	—3.4	89	22	50	16*	39	1.32	—1.63	0.91	...	4	24	7	0	s.
Stephensville	Taylor	...	5	72.5	.....	94	24	46	1	42	1.00	......	1.00	...	1	10	21	0	sw.
Tallahassee	Leon	193	19	74.6	+0.1	94	28	56	1*	30	1.05	—2.43	0.50	...	3	20	8	3	s.
Wausau	Washington	250	7	73.6	—2.6	95	24*	50	10‡	39	2.85	—3.17	1.30	...	3	15	14	2	se-sw.
Wewahitchka	Calhoun	...	5	73.4	.....	93	22*	49	15*	37	1.83	......	0.49	...	5	6	18	7	s.
	State Means	...	...	74.9	—2.7	...	.	...	...	...	2.51	—1.01	.	...	5	17	11	3	e.

CLIMATOLOGICAL DATA FOR MAY, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inch					Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Late Report April, 1904.																			
Fort Pierce	...	...	...	72.4	—0.1	90	21	45	11	30	1.92	—0.67	0.75	...	3	22	2	6	se.

All records are used in determining State means, but the mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation.

a, b, c, etc., following name of station, indicate number of days missing from report.

†Thermometers are not self-registering, and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily.

*More than one day. ‡Weather Bureau.

PART III.

FERTILIZERS.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

STATE VALUATIONS, 1904.

For Available and Insoluble Phosphoric Acid; Ammonia and Potash for the Season of 1904.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen).	15 cents a pound
Potash (as actual potash, K_2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $1.25 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid	6.22 per cent.	x$1.00—	6.22
Insoluble Phosphoric Acid	1.50 per cent.	x .20—	.30
Ammonia	3.42 per cent.	x 3.00—	10.26
Potash	7.23 per cent.	x 1.10—	7.95
Mixing and bagging			1.25
Commercial value at sea ports			25.98

Or a fertilizer analyzing as follows:

Available phosphoric acid	8 per cent.	x$1.00—$	8.00
Ammonia	2 per cent.	x 3.00—	6.00
Potash	2 per cent.	x 1-10—	2.20
Mixing and bagging			1.25
Commercial value at sea ports			$17.45

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of ten per cent. can be made in above valuations, *i*, *e*.:

Available Phosphoric Acid - - 90 cents per unit
Potash (K2O) - - - - 99 cents per unit
Ammonia (or equivelent in nitrogen) $2 70 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

MARKET PRICES OF CHEMICALS AND FERTILIZING MATERIALS AT SEA PORTS, JAN. 4, 1904.

Ammoniates.	Less than 5 tons	5 to 10 tons.	10 tons & over.
Nitrate of Soda 17 per cent. Ammonia	$50.00	$49.00	$49.00
Sulphate of Ammonia 25 per cent Ammonia	71.00	70.50	70.00
Dried Blood 16 per cent. Ammonia	54.00	53.50	53.00
POTASH.			
High Grade Sulphate Potash 48 per cent. Potash (K2O)	52.00	51.00	50.00
Low Grade Sulphate Potash 26 per cent. Potash (K2O)	32.00	31.00	30.00
Muriate of Potash 50 per cent. Potash (K2O)	46.00	45.00	44.00
Nitrate Potash, 13 Am., 42 Potash (K2O)	82.00	81.00	80.00
Kainit 12 per cent. Potash	14.00	13.50	13.00
Canada Hardwood Ashes 4 per cent. (K2O) Potash	17.00	16.50	16.00
AMMONIA AND PHOSPHORIC ACID.			
High Grade Blood and Bone, 10 10 per cent. Ammonia 7 per cent. Phosphoric Acid	35.00	34.50	34.00
Low Grade Blood and Bone, 6½ per cent. Ammonia, 8 per cent. Phosphoric Acid	27.00	26.50	26.00
Owl Brand Tankage, 5½ per cent. Ammonia	20.00	19.50	19.00

Raw Bone 4 per cent. Ammonia 22 per cent. Phosphoric Acid	29.00	28.50	28.00
Ground Castor Pomace 6 per cent. Ammonia, 2 per cent. Phosphoric Acid	22.00	21.50	21.00
Bright Coton Seed Meal 8 per cent. Ammonia market quotations	26.00	25.50	25.00
Dark Coton Seed Meal, 5 per cent Ammonia, market quotations	18.00	17.50	17.00

PHOSPHORIC.

Double Super Phos., 45 per cent. Available Phosphoric Acid	45.00	44.50	44.00
High Grade Acid Phosphate, 16 per cent. Available Phosphoric Acid	16.00	16.50	15.00
Acid Phosphate 14 per cent. Available Phosphoric Acid	14.00	15.50	13.00
Boneblack 17 per cent. Available Phosphoric Acid	25.00	24.50	24.00

MISCELLANEOUS.

H. G. Ground Tobacco Stems, 3 per cent. Ammonia, 9 per cent Potash	25.00	24.50	25.00
Pulverized Ground Tobacco Stems	16.00	15.00	15.00
Tobacco Dust, No. 1, 3 per cent. Ammonia, 2 K20 Potash	21.00	20.50	20.00
Tobacco Dust, No. 2, 1½ per cent. Ammonia, 1½ per cent. Potash	16.00	15.50	15.00
Dark Tobacco Stems, baled	16.00	15.50	15.00
Land plaster in sacks	10.50	10.25	10.00

Any formula will be mixed at the price of $1.25 per ton, in addition to the cost of the materials used.

FACTORS FOR CONVERSION.

To convert—

Ammonia into Nitrogen, multiply by	**0.824**
Ammonia Protein by	**5.15**
Nitrogen into ammonia, multiply by	**1.214**
Nitrate of soda into nitrogen, multiply by	**16.47**
Nitrogen, into protein by	**6.25**
Bone phosphate into phosphoric acid, multiply by	0.458
Phosphoric Acid into Bone Phosphate, multiply by	2.184
Muriate of Potash into actual potash, multiply by	0.632
Actual potash into muriate of potash, multiply by	1.583
Sulphate of potash into actual potash, multiply by	0.541
Actual potash into sulphate of potash, multiply by	.815

For instance you buy 95 per cent. of nitrate of soda and want to know how much nitrogen in it, multiply 95 per cent. by 16.47 you will get 15.65 per cent nitrogen; you want to know how much ammonia this Nitrogen is equivalent to, then multiply 15.65 per cent. by 1.214 and you get 18.99 per cent., the equivalent in ammonia.

CHEMICAL EQUIVALENTS.

Under the law and the regulations of the department chemical equivalents of the three essential elements, Ammonia, Available Phosphoric Acid, and Potash, are not allowed in the guarantee. A few instances have been noted, particularly in cotton seed meals, when the Ammonia is guaranteed, and followed by a statement of the protein contents:

As.	Ammonia	5 per cent.
	Protein	25.75 per cent.
Or	Ammonia	8 per cent.
	Protean	41.18 per cent.

Such a guarantee is misleading, as the terms "Ammonia" and "Protein." are equivalent, and only represent the "Nitrogen" (or ammonia) content of the goods.

Multiplying the nitrogen by 1.21 gives the ammonia thus, 3 per cent. nitrogen X1.21 gives ammonia 3.63 per cent. or nitrogen 3 per cent. X625 gives "Protein" 18.75 per cent.

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19		
Sulphate of Ammonia	21 to 24		
Dried Blood	12 to 17		
Concentrated Tankage	12 to 15	1 to 2	
Bone Tankage	6 to 9	10 to 15	
Dried Fish Scrap	8 to 11	6 to 8	
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	13 to 17	1½ to 2	

PHOSPHATE MATERIALS.

	Pounds per Hundred.		
	Ammonia	Available Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphte			26 to 32
Florida Rock Phosphate			33 to 35
Florida Super Phosphate		14 to 19	1 to 6
Grouned Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissolved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actual Potash	Am'nia	Phosphoric Acid	Lime
Muriate of Potash	50			
Sulphate of Potash	48 to 52			
Double Sul. of Pot. & Mag.	26 to 30			
Kainit	12 to 12½			
Sylvinit	16 to 20			
Cotton Seed Hull Ashes	15 to 30		to 9	10
Wood Ashes, unleached	2 to 8		to 2	30 to 25
Wood Ashes leached	1 to 2		to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4		3½
Cow Manure (fresh)	0.40	0 to 41	0.16	0.31
Horse Manure (fresh)	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)	0.67	1.00	0.23	0.33
Hog Manure (fresh)	0.60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.26	0.70

SPECIAL NOTICE.

The attention of persons sending samples of fertilizers for analysis is called to the following:

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER SAMPLES TO THE COMMISSIONER OF AGRICULTURE.

—SECTION 15 OF LAW.

Special samples of fertilizer sent in by purchasers, under Sec. 9 of the law approved May 22, 1901. Shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed and a FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICULTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN OR BOTTLE, WILL BE ACCEPTED FOR ANALYSIS. This rule is adopted to secure fair samples of sufficient size to make the six necessary determinations, viz: Moisture, available and insoluble phosphoric acid, ammonia and potash; and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means, of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

COPIES OF THE FERTILIZER LAW.

Citizens interested in the fertilizer law of the State, and desiring to avail themselves of its protection, can obtain a copy free of charge by sending for same to the Commissioner of Agriculture.

CAUTION TO PURCHASERS OF COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent. and above in ammonia, 2 per cent. or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its Commercial value is as follows:

8 per cent. ammonia @ $3.00	$24.00
2 per cent. available phosphate @ $1.00	2.00
1½ per cent. potash @ $1.10	1.65
	$27.65

The commercial value being in excess of the market value.

There is a quantity of adulterated cotton seed meal sold in the State, These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent. potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia	$13.50
1¾ per cent. phosphoric acid	1.75
1½ per cent. potash	1.65
Commercial value	$16.90

These goods are sold at $1.00 to $2.00 per ton less than prime meal. Their relative value is $10.75 less than prime meal. There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of ammonia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis and pay for the actual content of the valuable elements only.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. MARION G. DONK, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.

(Samples taken by purchaser).

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K_2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Special Mixture	473	.....	7.35	2.26	9.61	4.60	9.03	T. Kimball, St. Petersburg, Fla.
Fertilizer	474	.....	8.62	0.46	9.08	1.64	13.32	F. S. Hickock, Hastings, Fla.
Bone Compound (No. 1) ..	476	19.00	9.75	2.67	12.42	2.20	1.62	John M. Calhoun, Marianna, Fla.
Acid Phosphate (No. 2) ..	477	22.45	12.61	2.51	22.45	.....	.....	John M. Calhoun, Marianna, Fla.
Special Mixture	478	.....	6.08	0.76	6.84	4.36	7.86	R. D. Knight, Little River, Fla
Kentucky Brand—Pulverized Tobacco Stems....	479	.....	.....	.....	.....	2.89	10.14	Willson & Toomer Fert. Co., Jacksonville, Fla.
Cotton Seed Meal	480	.....	.....	.....	.....	7.02	.....	Schroeder & Auguinbaw, Quincy.
Fertilizer	481	14.25	4.90	0.32	5.22	3.57	12.99	J. F. Adams, Winter Park, Fla.
Sulphate of Potash	483	.....	.....	.....	.....	.....	50.48	Thos. W. Williams, Tampa, Fla.
Fertilizer	484	9.85	6.78	1.70	8.48	6.15	6.77	J. G. Powers, Terra Ceia, Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid. Available.	Phosphoric Acid. Insoluble.	Phosphoric Acid. Total.	Ammonia.	Potash (K2O)	BY WHOM SENT.
Sea Island Cotton Seed...	485	.....	.....	.....	.....	4.14	.....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	486	.....	.....	.....	.....	4.92	.....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	487	.....	.....	.....	.....	5.62	.....	Florida Mfg. Co., Madison, Fla.
Fertilizer	488	.....	5.20	0.77	5.97	1.86	13.15	H. O. Wordenhoff, Plant City, Fla
Fertilizer (light)	489	.....	7.56	1.59	9.15	4.65	7.61	Mrs. E. M. Lane, Delray, Fla.
Fertilizer (dark)	490	.....	6.12	0.66	6.78	4.28	7.24	Mrs. E. M. Lane, Delray, Fla.
Dried Blood	491	.....	.....	.....	.....	14.85	.....	J. T. Stanley, Jensen, Fla.
Raw Ground Bone	492	.....	9.53	13.98	23.50	4.50	.....	J. T. Stanley, Jensen, Fla.
Wood Ashes	493	.....	.....	.....	.....	.....	0.24	J. T. Stanley, Jensen, Fla.
Ground Tobacco Stems ..	494	.....	.....	.....	.....	3.18	9.28	J. T. Stanley, Jensen, Fla.
Cotton Seed Meal	495	.....	.....	.....	.....	7.75	.....	Schroeder & Auguinbaw, Quincy.
Cotton Seed Meal	496	.....	.....	.....	.....	7.71	.....	James B. Bours, Jacksonville, Fla
Acid Phosphate	497	.....	18.74	0.75	19.49	.....	.....	Goulding Fert. Co., Pensacola.
Fertilizer (acid phosphate)	498	14.40	13.64	0.53	14.17	0.00	0.0(	J. D. Clark, Mt. Pleasant, Fla.
Fertilizer No. 1..........	499	11.30	7.05	1.01	8.06	4.60	8.42	B. G. Hewet, Pebble, Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid.			Ammonia	Potash (K2O.)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Fetilizer No. 2	500	11.35	7.10	1.16	8.26	4.51	8.49	B. G. Hewet, Pebble, Fla.
Fertilizer	501	....	0.00	0.00	0.00	4.42	0.0	Peter Gardener, Palatka, Fla.
Guano	502	.....	.....	.....	26.13	3.71	3.14	James Holmes, Jensen, Fla.
Acid Phosphate	503	.....	13.68	2.05	15.73	.....	.....	Prof. O. J. Moore, Lisbon, Fla.
Crude Carbonate of Potash	504	.....	.....	.....	.....	.....	38.8	J. Hirschburg, Tallahassee, Fla.
White Carbonate of Potash	505	.....	.....	.....	.....	.....	62.6	J. Hirschburg, Tallahassee, Fla.
Fertilizer	506	10.85	7.30	1.26	8.56	3.18	3.52	W. M. Girardeau, Monticello, Fla.
Fertilizer	507	.....	9.71	1.56	11.27	5.36	7.68	P. L. Fiveash, Alliance, Fla.
Fertilizer	508	7.35	8.12	1.20	9.32	4.01	8.71	C. B. Robbinson, Corno, Fla.
Cotton Seed Meal	509	.....	.....	.....	.....	7.13	.....	J. E. Wirick, Jr., Lloyd, Fla.
Fertilizer	510	.....	6.10	5.57	11.67	2.08	8.46	R. L. McMullen, Clearwater, Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	511	10.45	9.99	1.96	8.95	4.63	4.86	Johnson & Co., Leesburg, Fla.
Fertilizer No. 1..........	512	.10	7.87	0.73	8.60	2.24	1.28	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 2..........	513	1 .15	9.11	3.00	12.11	2.12	1.84	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 3..........	514	10.10	8.43	2.68	11.11	2.13	2.15	J. W. McKeown Co., Concord, Fla.
Ferilizer No. 4..........	514	11.30	10.52	3.26	13.78	2.47	1.89	J. W. McKeown Co., Concord, Fla.
Blood, Bone and Potash..	516	14.20	9.91	2.95	9.86	3.80	4.44	J. H. Dishong, Dover, Fla.
Dark Cotton Seed Meal and Potash	518	.25	.....	.....	2.03	5.02	3.81	R. L. Goodwin, St. Pierce, Fla.
Ground Tobacco Stems ..	519	.....	.....	.....	.....	2.92	9.24	Armour Fertilizer Works, Jacksonville, Fla.
Fertilizer	520	14.61	7.75	2.76	10.51	2.29	2.23	J. H. Hinton, Dover, Fla.
Fertilizer No. 3	521	6.95	8.49	1.95	10.44	2.15	13.71	E. J. Yates, Lakeland, Fla.
Fertilizer No. 2	522	10.95	7.22	1.39	8.61	4.46	8.07	E. J. Yates, Lakeland, Fla.
Fertilizer No. 1..........	523	14.25	8.17	3.02	11.19	2.22	2.26	E. J. Yates, Lakeland, Fla.
Fertilizer	524	9.25	8.63	0.72	8.75	4.44	11.44	H. Price Williams, Miami, Fla.
Rock Phosphate	525	.....	.....	.....	37.16	.....	.....	T. D. Hawkins, King's Ferry, Fla.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	526	10.90	7.74	2.96	10.70	4.87	13.79	S. B. Robbinson, Seven Oaks, Fla.
Armour's H. G. Tobacco. Dust	527	.....	.....	.....	.....	2.60	3.91	Armour Fert. Wks., Jacksonville.
Fertilizer	528	14.00	5.61	3.01	8.61	4.43	5.65	H. J. Drane, Lakeland, Fla.
Fertilizer	529	10.20	7.12	3.00	10.12	4.37	15.56	F. G. Sampson, Boardman, Fla.
Dark Cotton Seed Meal...	530	.....	.....	.....	1.94	4.99	1.49	N. H. Fogg, Altamonte Springs.
Bright Cotton Seed Meal.	531	.....	.....	.....	2.91	8.37	1.81	N. H. Fogg, Altamonte Springs.
Rock Phosphate..	532	.....	.....	.....	34.05	.....	.....	John S. Flanagan, San Antonia.
Ashes	533	.....	.....	.....	.....	.....	0.60	A. J. Rosetter, Enterprise, Fla.
Fertilizer	534	.....	1.63	0.77	2.40	4.00	7.08	W. J. Dyer, Stuart, Fla.
Fertilizer No. 1.........	535	.....	6.08	0.85	6.93	4.20	9.34	A. P. DeWolf, Crescent City.
Fertilizer No. 2 (Sulphate Potash).	536	.....	.....	.....	.....	.....	47 24	A. P. DeWolf, Crescent City.
Fertilizer	537	.....	9.72	3.12	12.84	2.00	1.69	L. A. Adams, Luanna, Fla.
Fertilizer	538	.....	7.22	4.12	11.34	2.25	2.37	R. L. West, Plant City, Fla.
Rock Phosphate	539	.....	.....	.....	33.46	.....	.....	John D. Philips, Bailey, Fla.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	540	....	5.28	1.38	6.66	3.48	7.84	S. P. Lamb, Anthony, Fla.
Cotton Seed Meal	541	....	.....	.....	2.29	6.78	1.71	J. E. Snow, East Lake, Fla.
Tobacco Ashes	542	....	.....	.....	2.53	.....	12.12	James Holmes, Jensen, Fla.
Muck Soil	543	....	.....	.....	0.39	1.61	Tr.	W. Lippencott, Lakeland, Fla.
Fertilizer	544	....	7.60	9.05	15.05	3.41	12.36	L. C. Hefner, St. Petersburg, Fla.
Cotton Seed Meal	546	....	.....	.....	.....	6.84	.....	Lewis Lively, Tallahassee, Fla.
Fertilizer	547	....	11.08	2.67	13.75	2.82	1.87	Jas. B. Holmes, Jensen, Fla.
Wood Ashes	548	....	.....	.....	.....	.....	0.68	Chase & Co., Sanford Fla.
Fertilizer	549	....	7.94	1.86	9.80	5.28	17.02	S. B. Robinson, Seven Oaks, Fla.
Fertilizer	550	....	10.55	0.61	11.16	1.85	2.58	A. W. Turner, Coe's Mills, Fla.
Fertilizer	551	....	5.39	0.37	5.76	2.65	10.90	Horrace Prior, Como, Fla.
Fertilizer	552	....	9.25	1.66	10.91	1.50	0.97	Alexander & Baird, Beresford, Fla
Fertilizer	553	15.33	7.31	.....	7.31	.....	2.61	C. C. Wills, Woods, Fla.
Bright Cotton Seed Meal	554	....	.....	.....	.....	7.57	.....	J. W. Scott, Quincy, Fla.
Dark Cotton Seed Meal	555	....	.....	.....	.....	6.82	.....	J. W. Scott, Quincy, Fla.

BURAUE OF FERTILIZERS—Coutinued.

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
Ashes	556	.....	.....	.....	1.08	.....	2.28	John J. Beers, Emporia, Fla.
Cotton Seed Meal	557	.....	.....	.....	2.44	6.77	1.73	J. W. Scott, Quincy, Fla.
Dissolved Animal Bone	558	.....	9.86	5.85	15.71	2.67	.....	Florida Fert. Co., Gainesville.
Fertilizer	559	.....	7.22	0.36	7.58	4.36	5.91	Rome Tinny, Ozond, Fla.
Raw Bone Meal	560	.....	.....	.....	25.86	4.14	.....	Jas. B. Holmes, Jensen, Fla.

For values see heading "Bureau of Fertilizers."

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample" sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on followng pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a "Special Sample."

Special attention is called to the "Caution to Purchasers of Cotton Seed Meal" on another page. This adulterated meal is sold as bright or prime meal---though the guarantee is but 4½ per cent. of ammonia--it is evidently adulterated with rice hulls, its value is but little more than half that of prime meal.

DEPARTMENT OF AGRICULTURE, DIVISION OF CHEMISTRY.

R. E. ROSE, STATE CHEMIST, ANALYSIS OF FERTILIZERS, 1904, MARION G. DONK, ASSISTANT CHEMIST.

Samples taken by State Chemist under Section 1. Act approved May 22 1901.

NAME OF BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Cotton Seed Meal.......	311	**Guarant'd Analysis.**	......	......	......	......	7.35	......	Southern Cotton Oil Co, Washington, Ga.
		Official Analysis....	......	....	...	......	8.12	......	
Tobacco Dust..........	312	**Guarant'd Analysis.**	......	......	......	......	1.20	2.50	Tampa Fert Co, Tampa, Fla.
		Official Analysis....	......	......	......	......	1.38	2.80	
Hard Wood Ashes......	313	**Guarant'd Analysis.**	......	......	......	......	......	5.50	Blackshear Manufa'g Co., Blackshear, Ga.
		Official Analysis....	......	......	......	......	......	4.60	
H. G. Dissolved Bone Black..............	314	**Guarant'd Analysis.**	10.00	16.00	......	......	......	......	Armour Fert. Co., Jacksonville.
		Official Analysis....	11.30	20.26	0.29	20.55	......	......	
Acid Phosphate........	315	**Guarant'd Analysis.**	......	14.00	....	......	......	......	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	13.90	13.76	0.35	13.90	......	......	

Steamed Bone Flour....	316	**Guarant'd Analysis.**	......	......	......	23.00	3.00	......	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	5.75	13.38	13.46	26.84	3.85	......	
H. G Vegetab'e Manure.	317	**Guarant'd Analysis.**	10 00	5 00	2 00	.....	4 00	6 00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	12 10	7 64	2 05	9 69	4 16	5 98	
Fruit and Vine Manure.	318	**Guarant'd Analysis.**	8 00	6 00	1 00	......	2 00	12 00	Tampa Fert. Co, Tampa, Fla.
		Official Analysis....	8 95	8 31	0 64	8 95	2 42	11 09	
Ober's Fruit and Vine..	319	**Guarant'd Analysis.**	11 00	6 00	2 00	......	2 50	10 00	Oberr & Sons, Baltimore, Md.
		Official Analysis....	6 95	8 93	1 54	10 47	3 27	9 36	
Ober's Vegetable Manure..................	320	**Guarant'd Analysis.**	14 00	6 00	1 00	......	5 00	6 00	Ober & Sons, Baltimore, Md.
		Official Analysis....	13 70	7 87	1 78	9 65	5 43	5 96	
Baugh's Special Orange Tree..................	321	**Guarant'd Analysis.**	12 00	5 00	2 00	......	2 00	10 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	6 20	8 18	1 97	10 15	2 39	9 69	
Baugh's Vegetable Manure..................	322	**Guarant'd Analysis.**	12 00	6 00	4 00	......	5 00	7 00	Baugh & Sons, Baltimore; Md.
		Official Analysis....	13 35	6 71	1 71	8 42	5 48	6 88	
Double Strength of Potash..................	323	**Guarant'd Analysis.**	10 00	5 00	2 00	......	1 50	10 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7 55	6 65	1 09	7 74	2 05	11 40	
Peruvian and Fish Guano............... ..	324	**Guarant'd Analysis.**	10 00	5 00	1 00	......	4 50	5 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	8 35	6 22	2 44	8 66	4 92	6 58	
Potato Mixture........	325	**Guarant'd Analysis.**	10 00	5 00	2 00	......	3 00	9 00	Florida Fertilizer Co. Gainesville, Fla.
		Official Analysis....	7 90	4 99	2 53	7 52	3 79	8 23	

Peruvian & Fish Guano Double strength of Potash	326	**Guarant'd Analysis.**	......	5 00	1.00	......	4 50	10 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7.00	6.35	4.65	11.00	4.09	9.56	
Orange Tree Fertilizer	327	**Guarant'd Analysis.**	9 00	5 00	2 00	......	3 00	10 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis...	5 20	5 62	1 83	7 45	3 74	10 78	
Vegetable Fertiliz'r No 1	328	**Guarant'd Analysis.**	8 00	4 00	2 00	.....	4 50	5 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	8 80	3 95	2 76	6 71	4 41	6 04	
Fish and Potash	329	**Guarant'd Analysis.**	9 00	3 00	2 00	......	6 00	5 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	9 90	3 19	1 29	4 48	6 35	6 66	
Bean Special	330	**Guarant'd Analysis.**	8 00	4 00	3 00	......	3 50	8 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	4 90	4 24	3 04	7 28	4 61	7 85	
Cuke Special	331	**Guarant'd Analysis.**	9 00	3 50	2 00	......	4 00	8 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	4 75	3 15	2 21	5 36	4 24	8 52	
Early Trucker	332	**Guarant'd Analysis.**	7 00	4 00	2 00	.....	5 00	5 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	6 80	3 52	1 98	5 50	5 43	5 09	
Lettuce Special	333	**Guarant'd Analysis.**	9 00	4 00	2 00	......	6 00	6 00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	4 95	4 74	2 81	7 28	6 06	6 99	
Strawberry Special Fertilizer	334	**Guarant'd Analysis.**	8 00	6 00	......	......	3 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	9 80	5 91	2 22	8 13	3 98	5 14	

ANALYSIS OF FERTILIZERS—Continued.

Champion Citrus Compound........	335	Guarant'd Analysis.	10 00	6 00	......	......	3 00	14 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 25	5 86	0 93	6 77	4 03	11 50	
Old Dominion Potato Manure........	336	Guarant'd Analysis.	8 00	7 00	.....	......	5 00	8 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	14 50	5 37	1 10	6 51	5 09	8 42	
Special Vegetable Grower........	337	Guarant'd Analysis.	8 00	8 00	... ..	......	3 00	3 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 12	8 28	1 80	10 08	3 01	3 06	
Tiptop Tomato Trucker.	338	Guarant'd Analysis.	8 00	7 00	......	.....	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 55	7 23	1 70	8 93	4 59	5 16	
Fruit and Vine........	339	Guarant'd Analysis.	8 00	6 00	...	......	2 50	10 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 35	5 88	1 03	6 91	3 09	9 81	
Southern States Special.	340	Guarant'd Analysis.	......	6 00	......	......	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 65	8 49	1 53	10 02	3 59	5 98	
Cotton Seed Meal.......	341	Guarant'd Analysis.	....	....	.....	2 50	8 00	1 50	Southern Cotton Oil Co., Pensacola.
		Official Analysis...	......	.....	.....	.....	8 68	......	
Sterns Ammoniated Raw Bone........	342	Guarant'd Analysis.	15 00	8 00	1 00	......	2 00	2 00	Standard Guano & Chem. M'f'g. Co., New Orleans.
		Official Analysis....	15 75	9 47	2 06	11 53	2 10	1 48	
Baltimore Soluable Bone........	343	Guarant'd Analysis.	15 00	10 00	1 00	.....	1 00	1 00	Georgia Chemical Co., Augusta, Ga.
		Official Analysis....	14 95	10 32	3 70	14 11	1 47	1 11	
Cumberland Standard Fertilizers........	344	Guarant'd Analysis.	14 00	8 00	1 00	.....	2 00	2 00	Mutual Fertilizer Co., Savannah.
		Official Analysis....	13 40	8 65	0 53	9 17	1 98	1 97	

Scotts H. G. Acfd Phosphate..........	345	**Guarant'd Analysis.**	12 00	14 00	2 00	.....	......	......	Va.-Car. Chem. Co., Montgomery, Ala.
		Official Analysis....	14 00	15 27	1 84	17 11	......	......	
Champion Farmers' Choice............	346	**Guarant'd Analysis.**	15 00	8 00	1 00	.....	2 00	2 00	Standard Guano & Chem. M'f'g. Co., New Orleans.
		Official Analysis....	11 70	9 38	1 25	10 62	2 37	2 77	
Vegetable Compound...	347	**Guarant'd Analysis.**	16 00	7 00	1 00	....	4 00	4 00	Goulding Fertilizer Co., Pensacola.
		Official Analysis....	14 05	9 82	1 93	11 75	2 51	4 52	
Baltimore Soluble Bone	348	**Guarant'd Analysis.**	15 00	10 00	1 00	..	1 00	1 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	13 75	10 06	2 03	12 14	0 84	0 93	
Bone and Potash.......	349	**Guarant'd Analysis.**	15 00	10 00	1 00	......	......	2 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	12 30	10 82	2 57	13 39	......	1 84	
H G. Acid Phosphate	350	**Guarant'd Analysis.**	16 00	15 00	1 00	....	.....	.....	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	13 20	16 92	0 43	17 35	......	......	
Hard Wood Ashes......	351	**Guarant'd Analysis.**	......	......	....	.....	......	5 50	W. R. Fuller & Co, Tampa, Fla.
		Official Analysis....	.....	......	......	.....	.....	5 06	
H. G. Sulphate of Potash	352	**Guarant'd Analysis.**	......	......	......	......	......	50 00	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	.....	......	......	......	......	50 28	
Acid Phosphat..........	353	**Guarant'd Analysis.**	....	14 00	.....	......	......	......	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	14 25	14 75	1 02	15 47	......	......	
Sulphate of Ammonia...	354	**Guarant'd Analysis.**	......	......	......	......	24 00	......	Manatee Fertilizer Co., Palmetto, Fla.
		Official Analysis....	......	......	......	.....	25.09	......	

Vegetable Fertilizer.....	355	**Guarant'd Analysis.**	10.00	5.00	2 00	.....	4.00	6 00	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	12 40	5 48	2 76	8.24	4 18	7 05	
Fruit and Vine No. 1....	356	**Guarant'd Analysis.**	8 00	6 00	1 00	......	2 00	12 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	8 70	7 13	2 51	9 64	2 97	12 38	
H. G. Sulphate of Potash	357	**Guarant'd Analysis.**	......	....	......	......	......	49 00	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	......	......	......	......	....	49 08	
Fruit and Vine..........	358	**Guarant'd Analysis.**	8 00	6 00	1 00	......	2 00	12 00	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	10 20	6 96	2 26	9 22	2 29	11 88	
Baugh's Vegetable Manure	359	**Guarant'd Analysis.**	12 00	6 00	4 00	.....	5 00	7 00	Baugh & Sons, Ba'timore, Md.
		Official Analysis....	9 85	7 62	1 45	9 07	4 91	7 60	
Dissolved Bone Black...	360	**Guarant'd Analysis.**	......	17 00	......	......	......	......	Baugh & Sons, Baltimore, Md.
		Official Analysis....	7 50	18 26	3 74	22 00	......	......	
H. G. Vegetable Fish Guano	361	**Guarant'd Analysis.**	12 00	5 00	2 00	......	4 00	8 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	9 15	5 13	3 22	8 35	4 00	7 05	
Acid Phosphate........	362	**Guarant'd Analysis.**	......	14 00	....	.....	....	......	Manatee Fert. Co., Palmetto, Fla.
		Official Analysis....	9 35	15 47	2·34	17 81	.... .	......	
Blood and Bone.........	363	**Guarant'd Analysis.**	......	6 00	8 00	......	6 50	......	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	10 00	5 71	9 79	15 50	6 58	......	
Blood Bone and Potash.	364	**Guarant'd Analysis.**	8 00	6 00	3 00	......	4 00	4 00	W. R. Fuller Co., Tampa, Fla.
		Official Analysis....	10 90	6 26	3 17	9 43	3 93	4 20	

Orange Tree Special.....	365	**Guarant'd Analysis.**	12 00	6 00	2 00	......	2 50	12 00	Manatee Fert. Co., Paltimore, Md.
		Official Analysis....	7 80	7 57	0 38	7 95	2 27	13 65	
Dark Cotton Seed Meal.	365	**Guarant'd Analysis.**	12 00	......	.....	......	5 00	......	Florida Mn'fg Co., Madison, Fla.
		Official Analysis ...	......	......	.....	......	4 89	.....	
H. G. Sulphate of Potash	367	**Guarant'd Analysis.**	......	....	....	......	.....	49 00	Manatee Fert. Co., Palmetto, Fla.
		Official Analysis....	......	.....	......	......	......	49 72	
L. G. Sulphate of Potash	368	**Guarant'd Analysis.**	.....	......	.....	......	......	27 00	Manatee Fert. Co., Palmetto, F a
		Official Analysis....	.....	...	...	.....	......	25 86	
Cotton Seed Meal.......	369	**Guarant'd Analysis.**	.....	....	......	.....	8 00	......	H. E. Bridges, Memphis, Tenn,
		Official Analysis....	.....	.....	......	...	8 25	......	
Cotton Seed Meal.......	370	**Guarant'd Analysis.**	7 05	......	......	2 40	8 00	1 76	Abbeville Cotton Oil Co., Abbeville, Fla,
		Official Analysis....	......	......	......	.....	8 51	.....	
H. G. Sulphate of Potash	371	**Guarant'd Analysis.**	8 00	....	.....	.....	......	49 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	......	.....	......	..	......	48 52	
Simon Pure Pine Apple	372	**Guarant'd Analysis.**	8 00	4 00	1 00	.....	4 00	6 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	7 90	5 75	1 89	7 55	3 80	7 01	
Simon Pure Tomato.....	373	**Guarant'd Analysis.**	12 00	4 00	2 00	.....	5 00	9 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	8 85	5 28	1 48	6 76	6 50	10 48	
H. G, Blood, Bone and Potash...............	374	**Guarant'd Analysis.**	....	......	.....	..	7 00	10 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	6 10	2 21	1 61	3 83	7 91	10 11	

Gem Bean Fertilizer.....	375	**Guarant'd Analysis.**	......	6.50	......	......	5.00	2.00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	8.00	5 00	2.91	7.91	5 10	3 26	
Special Mixture No, 1...	376	**Guarant'd Analysis.**	8 00	6 00	1 00	......	5 00	5 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	9 50	5 95	0 96	6 91	5 23	5 95	
Ideal Fertilizer........	377	**Guarant'd Analysis.**	8 00	5 00	1 00		4 00	6 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	9 20	6 15	0 95	7 11	3 63	8 26	
Mape's Fruit and Vine Manure..............	378	**Guarant'd Analysis.**	10 00	5 00	2 00	......	2 00	10 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	15 95	5 44	2 57	8 01	2 50	11 05	
Mape's Vegetable Manure..................	379	**Guarant'd Analysis.**	12 00	6 00	2 00	......	5 00	4 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	15 25	6 40	2 49	8 89	4 86	5 95	
Mape's Orange Tree Manure..................	380	**Guarant'd Analysis.**	12 00	6 00	2 00	......	4 00	3 00	Mape's Formula & P. G. Co,, New York.
		Official Analysis....	15 95	6 93	3 40	10 33	4 17	4 09	
Bradley's Fruit and Vine Fertilizer	381	**Guarant'd Analysis.**	13 00	5 50	1 00	......	2 25	10 00	American Ag'l & Chem. Co., New York.
		Official Analysis....	7 95	6 71	2 44	9 15	2 58	10 15	
Baugh's Fruit aud Vine Manure..............	382	**Guarant'd Analysis.**	12 00	5 00	2 00	......	2 00	15 00	Baugh & Son, Baltimore, Md.
		Official Analysis....	6 75	7 23	3 16	10 39	2 12	14 38	
Bradley's Vegetable Fertilizer............	383	**Guarant'd Analysis.**	13 00	6 00	1 00	......	4 00	5 00	American Ag'l & Chem. Co., New York.
		Official Analysis....	10 60	7 77	2 50	10 27	4 00	5 19	
Bradley's Nursery Stock	384	**Guarant'd Analysis.**	13 00	8 00	1 00	......	4 50	3 00	American Ag'l & Chem. Co., New York.
		Official Analysis....	12 50	8 66	2 95	11 61	4 22	2 92	

Fruit and Vine..........	385	**Guarant'd Analysis.**	8 00	6 00	1 00	......	2 50	10 00	Va.-Carolina Chem, Co,
		Official Analysis....	7 60	6 22	0 33	6 55	2 68	8 73	Savannah, Ga.
Special Fruit and Vine..	386	**Guarant'd Analysis.**	10 00	6 00	1 00	......	4 00	13 00	Willson & Toomer Fert.
		Official Analysis....	5 10	6 59	0 36	6 95	4 70	13 70	Co., Jacksonville.
Cotton Seed Meal.......	387	**Guarant'd Analysis.**	......	......	...	2 50	7 50	1 50	W. A. Brode & Co., Mem-
		Official Analysis....	......	......	......	3 13	8 15	1 83	phis, Tenn.
Cotton Seed Meal.......	388	**Guarant'd Analysis.**	......	......	......	2 00	7 50	1 00	A. A. Smith, Atlanta, Ga.
		Official Analysis....	......	......	.....	3 08	7 58	1 92	

PART IV.

MISCELLANEOUS.

IRISH POTATO GROWING AT HASTINGS, FLA.

We reprint the following from the "Hastings Farmer and Trucker," on the subject of potato growing, its cost, yield, etc. As this industry has during the past year assumed immensely enlarged proportions, the items in the publication will be interesting to many.

One of the first things that a prospective settler would naturally want to find out, before locating in Hastings or any other locality, where he proposed to gain a livelihood by cultivating the soil, would be the character of the products grown, and the cost of their cultivation.

As Irish potatoes is the main money crop grown here, although many other crops are grown with profit, the cost of planting, caring and harvesting this crop is of the greatest interest. Mr. W. H. Erwin, one of the pioneer potato growers, and who has successfully planted here for fourteen years, gives the following estimate of putting in an average crop of potatoes in the spring, on one acre of ground:

Seed at $3.00 per barrel	$12 50
Fertilizer	25 00
Labor	5 00
50 barrels at 25 cents	12 50
Harvesting and delivery to the depot 20c per barrel	10 00
Total	$65 00

The average price received by grower ranges from $3.00 to $4.00 per barrel for No. 1 potatoes, and from $2.00 to $3.00 per barrel for No. 2 potatoes.

The range of quantity is about 85 barrels of No. 1 to 15 barrels of No. 2.

The range of production is from 30 to 75 barrels, although in many instances still better results have been obtained. Growers generally, however, prepare to care for fifty barrels to the acre. Mr. Erwin's crop last year, which was an "off year," averaged him 50 barrels to the acre in a crop of some sixty acres.

Mr. Erwin states, however, that it is not quite fair to charge up the entire cost of the fertilizer to the potato crop, as the ground without further fertilizer produces a generous second crop of sweet potatoes, crab grass hay, cow peas, corn, velvet beans, or other crops that can be matured and taken out in time to allow planting the same ground in the spring.

It is also of interest to know that Mr. Erwin has planted Irish potatoes successfully on the same ground for thirteen consecutive years, besides occasionally putting in a fall crop of potatoes on the same soil, and there appears to be no dimunition in the yield.

CAUTION TO BUYERS OF COTTON SEED MEAL.

Its Value as a Stock Food, and Fertilizer, Depends on the Nitrogen Contents—Also Called Ammonia or Protein.

The value of Cotton Seed Meal, as a stock food, and as a fertilizer, has become generally known during the past few years.

Its use is now universal among stockmen, and particularly among dairymen; its value—when pure and unadulterated—is greater as a flesh and milk producer, than any other feed; it stands at the head of the list of consentrated flesh, and milk, formers; and in proportion to its actual food value, it is the cheapest source of muscle and milk.

This fact has lead to an enormous demand, not only in America but in Europe. As the demand has increased so has the price; at the same time this demand, and ready sale, has caused more or less adulteration, and lowering of quality.

The same ingredients that make cotton seed meal a valuable stock food—that is the nitrogen—also gives it its value as a fertilizer.

The Nitrogenous elements in cotton seed meal and similar foods; are classed Proteins. These Proteins, are simply the Nitrogen multiplied by 6.25.

The dairyman, and stockman, desires that the Protein content of the feed be expressed in the guarantee; the gardner and fruit grower desires to know the Nitrogen or Ammonia content of his fertilizer.

These terms, Nitrogen, Ammonia, and Protein, as here used, are identical; and mean the same substance; they are simply different expressions for the same substance in different forms; just as, "one dollar," ten dimes, and "one hundred cents, mean exactly the same amount of money, and are each equivalent to the other.

The Nitrogen in cotton seed meal—or other substance—multiplied by 1.22 gives the equivalent in Ammonia.

While the Nitrogen multiplied by 6.25 gives the equivalent in Protein, or the Ammonia multiplied by 5.15 gives its equivalent in Protein. While multiplying Ammonia by 0.814 gives Nitrogen.

Hence the terms, Nitrogen, Ammonia and Protein, when so used, are equivalent and interchangeable.

This unfortunately, is not generally known, and leads to much confusion of terms, and is frequently taken advantage of by some dealers and manufacturers, to mislead, in fact to deceive the purchaser.

Proteins, are those Nitrogenous substances represented by the Albumins—the white of eggs—by Fibrin—muscular tissue, lean meat, and Casine,—the curd of milk, they are generally known as flesh or muscle formers. When they ferment or decay, they form Ammonia, a most ill smelling gas.

The Nitrogenous substance multiplied by 6.25 gives the Protein; thus, 3 per cent Nitrogen multiplied by 6.25 equals 18.75 per cent Protein.

Or 3 per cent Nitrogen multiplied by 1.22 is equivalent to 3.66 per cent Ammonia; or 3 per cent Ammonia multiplied by 5.15 is equivalent to 15.45 per cent Protein.

Just as one dollar, equals ten dimes, or one hundred cents, or ten dimes equals one dollar. I desire to make it clear that a guarantee, expressed in more than one of these terms, is misleading; that but one, the Ammonia, is permissable under the Florida Statute, and rules of the Agricultural Department, and to caution dealers not to handle goods having equivalents of the materials required in the guarantee, expressed on the guarantee tag, or package.

The fact that some dealers and manufacturers, still insist on expressing two or more equivalents in their guarantee, is the reason for this lengthy explanation.

The facts are, but one term should be used in expressing the Nitrogen contents of a cotton seed meal or fertilizer.

The Florida law says that it shall be expressed as Ammonia.

The following is copied from a guarantee on a brand of "Prime" Cotton Seed Meal:

Nitrogen	6.½ per cent.
Ammonia	8 per cent.
Protein	41 per cent

The obvious intention being to lead the purchaser to believe he is securing 55½ per cent of food stuff, when in fact he gets 6½ per cent. Nitrogen, and nothing else. This Nitrogen being equivalent to 7.93 per cent Ammonia; or equivalent to 40.62 per cent of Protein.

Under the Florida law, and the regulations of the Agricultural Department; this guarantee should have expressed the 8 per cent. of Ammonia only; the buyer if he desired to know how much protein he had, by simply multiplying the 8 per cent by 5.15 would know he had 40.20 per cent. of Protein. (The factors used in this article are not carried beyond the second decimal, hence are not minutely exact.)

The State value of the above sample would be as follows:

Ammonia, 8 per cent multiplied by $3.00 equals	$24.00
Bags and Bagging	1.25

Or $25.25 per ton at sea ports; had credit been claimed in the guarantee for the 2 per cent. Phosphoric Acid, and 1.50 per cent of Potash contained in the meal, a further credit of $3.65 would be allowed making a total State value of $28.90 per ton.

Another brand sold as "Bright" or "Prime" Meal, has the following guarantee:

Nitrogen	4.12 per cent.
Ammonia	5.00 per cent.
Protein	25.75 per cent.

Implying, that there are 34.87 per cent of Nitrogenous material guaranteed, when in fact the only guarantee under the Florida law is the 5 per cent Ammonia, with a State value of $16.25 as compared to the first example $25.25, showing a value of $9.00 per ton less than the 8 per cent goods.

This low grade meal is sold as "Prime" or "Choice" Meal, in color and texture it closely resembles "Pure Bright Meal"; and is calculated to deceive the casual observer. It however, is not guaranteed above 5 per cent

Ammonia, hence there could be no recovery in case of suit, if the analysis shows 5 per cent Ammonia, though the purchaser bought it for Prime Meal. Prime bright cotton seed meal, carries not less than 7.50 per cent of Ammonia, (equivalent to 38.62 per cent of Protein), and generally as shown by analysis of this and other States, 8 per cent or more of Ammonia, which is equal to 41.20 per cent of Protein.

Dark cotton seed meal, or Sea Island cotton seed meal is guaranteed to carry 5 per cent Ammonia, 2 per cent Phosphoric Acid and 1.00 per cent Potash, its State value is as follows:

Ammonia 5 per cent x $3.00	$15.00
Phosphoric Acid 2 per cent x $1.00	2.00
Potash 1 per cent x $1.10	1.10
Bags, etc.	1.25
	$19.35

Its market value is very close to the State value, the dark meals are far superior both as a fertilizer and as a feed, to the low grade or adulterated bright meals; and sells for less per ton; it is a pure meal and sold upon its merits.

This is not the case with adulterated bright meal with 4½ per cent or 5 per cent Ammonia guaranteed. These meals are adulterated with ground rice hulls, and similar valueless materials; not only useless, but in fact harmful to the animal. Buyers should examine the tags on their purchases, accept no "Bright Meal" with a guarantee of less than 7.50 per cent Ammonia; no dark meal with less than 5 per cent Ammonia; make no allowance, do not consider at all the Protein or Nitrogen if stated, as it is all covered or expressed by the Ammonia guarantee.

You can convert the Ammonia into Protein if you desire by multiplying by 5.15; or into Nitrogen by 0.824 exactly as you can convert your dollars into dimes by multiplying by 10, or into cents by multiplying by 100 and though the figures may be increased the values are not changed.

By the rules of the Cotton Seed Meal Crushers Association, "Choice" meal must contain at least $8 per cent Ammonia (equivalent to 41.19 per cent Protein) and "Prime" meal must contain at least 8 per cent of Ammonia, or if from the South Atlantic States, 7.50 per cent Ammonia, (equivalent to 38.62 per cent of Protein)

This is the standard fixed for Choice or Prime meal by reputable manufacturers. If less than these amount of Ammonia 7.50 per cent, or 8 per cent, are guaranteed on "Choice" or "Prime" meal, it has undoubtedly been adulterated.

I am pleased to say our Florida manufacturers, "The Florida Cotton Oil Company" at Jacksonville and Tallahassee; "The Florida Manufacturing Company" at Madison, (who make dark meal only) "The Pensacola Cotton Oil Company," and the mills of the "Southern Cotton Oil Company," generally, have been found to meet their guarantee and frequently exceed them.

I also note that the proportion of hulls in most meals examined this season is greater than formerly, reducing the Ammonia content proportionately.

Most of the low grade, adulterated goods are offered as prime meal, though not guaranteed above 4½ per cent or 5 per cent of Ammonia, are generally found in the northern part of the State particularly in the northern tier of counties; this condition is very largely due to the indifference, or carelessness of the dealers and consumers themselves. If the buyer insists upon pure goods 7.50 per cent. or 8 per cent Ammonia, refuses to accept adulterated material, demands the guarantee be on each sack, and under our law, declines to pay for goods not meeting the guarantee; the sale of such goods will soon cease.

Instances however are known where two lots of meal, one with a guarantee of 8 per cent Ammonia, and other with a guarantee of 4½ per ecnt Ammonia were offered at the same time and place at that same price, by a local dealer to his customers, (for which he had paid the same price per ton) and in many instances the consumer preferred the 4½ per cent goods as it "looked better" in spite of the guarantee on the tags, one offering 8 per cent the other 4½ per cent of food value. In both cases the guarantees were upheld by analysis one lot was worth $24.00 per ton, the other $13.50 per ton relatively. Both sold for $1.35 per hundred pounds at retail, or $27.00 per ton. In this case the dealer and consumer were both defrauded though the dealer would be liable in damages to the consumer.

R. E. ROSE, State Chemist.

Tallahassee, July 29th, 1904.

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FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

AUGUST 1, 1904

B. E. McLIN
COMMISSIONER OF AGRICULTURE.
TALLAHASSEE, FLORIDA.

Part 1—Crops. Part 2—Weather Report.
Part 3—Fertilizers

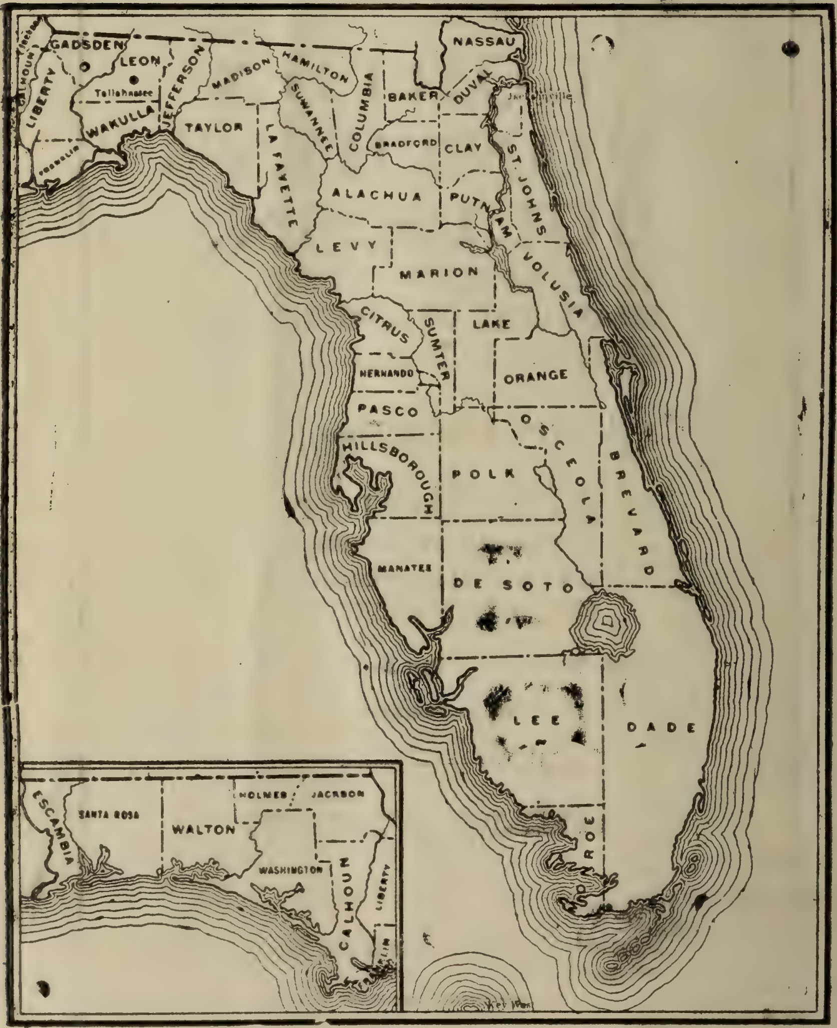
Entered January 31, 1903 at Tallahassee, Florida as second-class matter, under Act of Congress, of June, 1900.

These Bulletins are issued free to those requesting them.

TALLAHASSEE, FLA.
I. B. HILSON, STATE PRINTER.

County Map of the State of Florida.

(For the Bulletin.)



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PART I.

CROPS.

NOTICE TO READERS.

Owing to the exhaustion of the funds appropriated for the publication of the Monthly Bulletin, as well as for other Department printing, its publication will, with this issue be suspended, until the coming Legislature shall make a further appropriation for its continuance. The needs of the Department, in the printing of fertilizer stamps, large numbers of blank forms of many kinds, and the tremendous increase in demand for the Monthly Bulletin have grown so great in the last two years, increasing several thousand in number, that the amounts appropriated by the Legislature have proved wholly inadequate for the purpose. We very much regret the necessity for such action, but we are sure every fair minded reader of the Bulletin will appreciate the situation as it is.

Yours Truly,

B. E. McLIN,
Commissioner of Agriculture.

DEPARTMENT OF AGRICULTURE.

Hon B. E. McLin, Com. H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

Alachua County—The good rains have benefitted crops very much and they are getting into a fine condition; cotton doing well.

Baker County—Cotton has begun to shed very badly, and is throwing off a lot of fruit. Other crops are doing well. Live stock is in fine condition.

Bradford County—Crops are all doing well, are in fine condition, and the prospect for a large yield is good. Live stock, except hogs, is in excellent condition; cattle fat and healthy.

Brevard County—Our crops are all fine; oranges north of Eau Gallie are very promising. Seasons are favorable and fruit trees and fruit doing well.

Calhoun County—Crops are all doing well, and have about caught up all they lost during the drought. Tobacco is only planted for home use. Wool is estimated this year at three pounds to the fleece. Live stock of all kinds in fine condition, and cattle fat.

Citrus County—Since the rains begun, crops have wonderfully improved. All are in fine condition, and the yield this season is expected to be unusually good. Fruit crops are also fine, and trees doing well.

Clay County—All crops are in fine condition; the rains have brought them up as good, or better than usual in some instances. Live stock is all in an unusually fine condition. Prospect for a large yield of crops is exceedingly promising.

Columbia County—Cotton is losing some now, corn is not well filled on account of dry weather. Rice and potatoes are late, but if rain continues there will be a good crop; also of hay and sugar cane.

Dade County—At this time the weather is very hot and dry. Field peas, velvet beans and potatoes are doing well. Fruit crops are doing finely, the citrus fruits particularly, but the pineapple crop is somewhat short. Live stock in good condition.

ESCAMBIA COUNTY—There will be a large increase in cotton and corn; other field crops fine. Live stock is in best of condition, and there is a large increase in cattle this year. Wool will be about the average; there will be an immense yield of honey.

FRANKLIN COUNTY—This county produces only a small number of field crops, but those growing are in good condition. Live stock is also in fine order, and cattle fat.

GADSDEN COUNTY—Cotton and corn have both suffered for rain; cotton plant small but in fair condition; corn crop will be short. Field peas and other crops in good condition, but slow of growth. Tobacco also suffered from drought. Live stock in most excellent condition, healthy and fat.

HAMILTON COUNTY—All crops have suffered from the effects of the long drought; the yield will not be a full one in either corn or cotton. Peas, potatoes, etc., have some time to regain loss.

HILLSBOROUGH COUNTY—The average condition of crops is very good; some are rather poor, and some are above the average. Fruit trees and fruits are doing well. Live stock is in good condition.

HOLMES COUNTY—Crops in this county have suffered very much from the long drought; cotton is backward, and corn will be short; peas and potatoes will make up most of the loss if it rains plentiful. Live stock is in fair condition; would have been better if pasture had not been kept down by drought.

JACKSON COUNTY—The crops generally are in fairly good condition, and fair yields will be had on the average; some crops are fine. Live stock of every kind in much better condition than at this time last year.

JEFFERSON COUNTY—A large majority of the crops are in a very fine condition, and the yield in many cases will be above the average. Sweet potatoes are backward, but are fast improving. Live stock is in better condition than for many years.

LaFayette County—Crops though a little backward, are in good condition as a rule; potatoes and velvet beans are late on account of unseasonable weather. Live stock in good condition.

Lake County—Crops are in fair condition, some very backward and not so good, others very good. Fruit trees and fruit doing well.

Lee County—All crops are in good condition and doing well. Fruit trees and fruit also doing well; the crops will be very fine this year. Live stock in good condition.

Leon County—Cotton is in good condition, but plant is small, and in many parts of county the top crop is made. Corn will be short on account of long dry spell. Other crops are coming out rapidly, since the rains began, and are doing well. Live stock is in fine condition.

Levy County—Condition of crops in this county are a good average; cotton is a little off, but is still doing well. Field peas and potatoes are a little backward. Live stock is in fine condition in all parts of the county. The yield of tobacco, honey and wool is good.

Madison County—The general average of crops in this county is good. Velvet beans and sweet potatoes are as yet very much behind, but good season will make a rapid improvement. Live stock is in a fine condition generally. Hogs are a little off. Prospects are excellent.

Manatee County—The condition of all field crops is good; also fruit trees and fruit crops are doing well, and will, if nothing happens, yield fine crops. Live stock is all in fine condition.

Osceola County—Crops are mostly doing well, some are a little off, but the average will be good. Prospect for good yield of fruit crops is fair. Live stock is all doing well. The yield of honey and wool is very good.

Polk County—Crops in this county are all in a remarkably good condition, and if nothing unforseen happens, the yield all around will be extra fine. Fruit trees and fruit crops are very fine and the crop of fruit will be large. All live stock is in fine condition. The yield of honey and wool has been large.

St. Johns County—The crops in this county are the finest for a long time. All growing crops are in good condition. Fruit trees and their crops are also fine, and are in excellent condition. Live stock is in splendid order and doing well. Yield of honey and wool has been good.

Santa Rosa County—Nearly all crops in this county are in an average condition, some are fine, others a little off, but general conditions are good. Live stock in fine condition all around. The yield of honey and wool are both large.

Sumter County—The average condition of crops is fair, and most of them will improve with better seasons. Live stock is in general good condition. Fruit trees and crops doing well. Yield of honey and wool very good.

Suwannee County—Frequent rains are of great benefit to most crops. Corn is not so good this season on account of dry weather in early part of the season. Crops generally are good; potatoes are improving rapidly. Live stock doing well, and in good condition.

Wakulla County—Cotton is in good condition, but corn and sugar cane are very backward, and corn will be short. Sweet potatoes are also backward for want of rain, but are rapidly improving. Other crops are in fair condition. Live stock is doing well. The yield of honey is large, and if the laws were made to protect the sheep grower instead of the sportsmens dogs, we would have 40,000 pounds of wool each year instead of 300 pounds.

Washington County—The field crops are as a rule very good, some of them in fine condition. The yield of crops generally is quite promising. Live stock is in fine condition, and cattle are fat. The yield of honey and wool are very good.

REPORT OF CONDITION AND PROSPECTIVE YIELD OF CROPS FOR JULY, 1904, AS COMPARED WITH AN AVERAGE, ALSO CONDITION OF LIVE STOCK, AND ANNUAL YIELD OF TOBACCO, HONEY AND WOOL.

COUNTIES	Upland Cotton		Sea Island Cotton		Corn		Sugar Cane		Rice		Field Peas	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua....	....	....	70	80	80	90	50	50	....	...	50	50
Baker... ..	....	....	90	90	100	100	75	75	100	75	....	....
Bradford ..	....	....	105	105	109	100	80	80	100	100	100	100
Brevard...	...	....	....	....	....	...	100	100	....	....	200	200
Calhoun...	100	100	100	100	100	100	75	75	....	....	...	....
Citrus.....	....	....	...	....	100	105	100	100	....	...	105	105
Clay.......	....	....	100	110	120	130	100	100	100	100	100	100
Columbia..	...	....	100	90	100	90	100	80	90	80	100	100
Dade	...		....	....	....	...	....	...	...	....	100	100
Escambia..	100	100	....	...	130	130	130	130	100	100	100	100
Franklin...	...	....	....	....	85	90	85	90	.	....	85	90
Gadsden...	90	100	80	70	75	75	65	75	...	...	100	125
Hamilton..	....	....	75	90	75	60	75	75	75	75	50	75
Hernando..	...	....	....	...	100	100	100	120	....	....	...	....
Hillsboro..	90	80	....	....	75	75	100	110	....	....	100	110
Holmes....	90	90	...	....	95	95	100	100	85	85	100	100
Jackson. ..	90	90	95	95	80	80	90	90	....	....	100	100
Jefferson ..	90	100	85	90	100	100	100	100	....	....	100	100
LaFayette..	....	....	100	100	90	90	85	90	....	....	95	95
Lake.......	....	....	....	....	50	75	80	85	100	100	100	100
Lee........	....	....	...	...	110	110	110	110	90	90	90	90
Leon......	90	90	....	....	80	85	90	100	....	....	100	100
Levy.......	...	....	90	90	100	100	100	100	80	80	75	75
Madison...	100	100	105	105	90	90	110	110	100	100	80	80
Manatee...	....	....	....	....	100	100	100	100	100	100	100	100
Marion....	...	....	90	95	100	100	100	100	85	90	100	100
Nassau....	....	....	....	....	100	100	100	100	....	....	....	....
Osceola...	....	....	....	....	80	80	90	100	100	100	100	100
Polk.......	....	....	....	....	120	120	100	100	90	90	100	100
Pasco	....	....	....	....	90	100	100	100	100	100	100	100
St. Johns..	....	...	....	....	160	160	100	100	...	....	110	120
Santa Rosa	98	100	....	....	95	100	100	100	100	100	95	100
Sumter.....	....	....	90	95	85	90	90	90	....	...	90	90
Suwannee..	....	...	90	90	80	80	70	70	50	50	90	90
Wakulla...	100	100	....	....	40	50	80	90	....	....	100	100
Washin'ton	85	85	90	100	100	100	100	100	100	100	100	100
Gen'l av'ge per cent..	94	95	90	99	94	99	92	94	92	90	97	100

CONDITION OF CROPS—Continued.

COUNTIES	Velvet Beans		Sweet Potatoes		Peanuts		Cassava		Hay	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	50	90	80	90	40	50	60	80	60	70
Baker	....	....	100	100	75	75	......	....	....	....
Bradford	90	80	95	100	90	90	......	....	100	100
Brevard	100	100	120	150	....	......	......	....	....	....
Calhoun	....	....	75	75	....	.....	......	....	....	....
Citrus	95	100	100	100	95	100	......	....	100	105
Clay	100	100	100	100	100	100	100	100	100	100
Columbia	100	100	90	90	110	100	100	100	50	50
Dade	100	100	100	100	....	......	......	....	....	....
Escambia	100	100	100	130	100	110	100	100	100	100
Franklin	....	....	...	....	90	90	......	....	100	100
Gadsden	80	60	100	60	100	100	......	...	90	80
Hamilton	50	75	75	60	50	75	......	....	50	75
Hernando	100	125	100	100	....	......	......	....	....	....
Hillsboro	....	....	75	75	....	......	......	....	80	100
Holmes	95	95	100	100	....	......	......	....	75	75
Jackson	100	100	75	75	90	90	......	....	100	120
Jefferson	....	....	75	70	100	100	100	100	....	....
LaFayette	60	75	90	100	100	100	......	....	....	....
Lake	100	100	50	75	....	......	......	....	75	100
Lee	90	90	110	110	80	80	90	90	110	110
Leon	100	100	90	100	100	100	100	100	100	110
Levy	100	100	90	90	100	100	100	100	100	100
Madison	50	50	40	50	105	105	......	....	100	100
Manatee	100	100	100	100	....	......	......	....	....	....
Marion	95	100	75	90	100	100	90	100	100	100
Nassau	....	....	100	100	100	100	......	....	100	100
Osceola	100	100	90	100	....	......	100	100	100	100
Polk	100	100	120	120	120	120	90	90	150	150
Pasco	85	90	100	100	....	......	85	100	....	....
St. Johns	110	110	110	110	90	90	110	110	110	100
Santa Rosa	100	100	98	100	98	98	......	....	100	100
Sumter	85	90	75	80	...	......	......	....	...	....
Suwannee	80	80	60	60	90	90	80	80	100	100
Wakulla	....	....	40	50	100	100	......	....	60	75
Washin't'n	90	90	90	90	100	100	85	85	....	....
Gen'l av'ge per cent	90	93	88	91	95	95	93	96	92	93

CONDITION OF CROPS—Continued.

COUNTIES	Egg Plants		Tobacco		Bananas		Pine Apples		Guavas	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	90	90	....	....	....	....	....	....	....	....
Baker	....	....	....	....	....	....	....	....	....	....
Bradford	....	....	....	....	....	....	....	....	....	....
Brevard	....	....	....	....	120	150	....	....	150	200
Calhoun	....	....	....	....	....	....	....	....	....	....
Citrus	....	....	....	....	....	....	....	....	....	....
Clay	....	....	....	....	....	....	....	....	....	....
Columbia	....	....	....	....	....	....	....	....	....	....
Dade	....	....	....	....	100	100	100	95	100	100
Escambia	100	100	75	75	....	....	....	....	....	....
Franklin	....	....	....	....	....	....	....	....	....	....
Gadsden	....	....	90	80	....	....	....	....	....	....
Hamilton	....	....	....	....	....	....	....	....	....	....
Hernando	....	....	....	....	....	....	....	....	....	....
Hillsboro	....	....	....	....	....	....	90	95	50	10
Holmes	....	....	....	....	....	....	....	....	....	....
Jackson	....	....	....	....	....	....	....	....	....	....
Jefferson	....	....	....	....	....	....	....	....	....	....
LaFayette	....	....	....	....	....	....	....	....	....	....
Lake	....	....	....	....	....	....	....	....	....	....
Lee	100	100	....	....	110	110	110	110	120	120
Leon	....	....	100	105	....	....	....	....	....	....
Levy	....	....	....	....	....	....	....	....	....	....
Madison	....	....	....	....	....	....	....	....	....	....
Manatee	....	....	....	....	100	100	100	100	80	80
Marion	85	90	....	....	....	....	....	....	....	....
Nassau	....	....	....	....	....	....	....	....	....	....
Osceola	....	....	....	....	80	50	100	100	125	120
Polk	....	....	....	....	100	100	100	100	....	....
Pasco	....	....	....	....	....	....	....	....	....	....
St Johns	....	....	100	100	110	110	....	....	120	120
Santa Rosa	....	....	....	....	....	....	....	....	....	....
Sumter	75	85	....	....	....	....	....	....	....	....
Suwannee	....	....	....	....	....	....	....	....	....	....
Wakulla	....	....	....	....	....	....	....	....	....	....
Washington	....	....	....	....	....	....	....	....	....	....
Gen'l av'ge per ecnt	90	93	91	90	103	103	100	100	106	107

CONDITION OF CROPS—Continued.

COUNTIES	Orange Trees		Lemon Trees		Lime Trees		Grape Fruit Trees	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	90	90						
Baker								
Bradford								
Brevard	100	150	100	125	100	125	100	150
Calhoun								
Citrus	100	100					100	100
Clay								
Columbia								
Dade	110	115	100	100	100	100	110	120
Escambia								
Franklin								
Gadsden								
Hamilton								
Hernando	85	80					80	85
Hillsboro	100	100			100	10	100	125
Holmes								
Jackson								
Jefferson								
LaFayette								
Lake	100	80	100	25			100	75
Lee	110	110	100	100	110	110	120	120
Leon								
Levy								
Madison								
Manatee	100	100	100	100	100	100	100	100
Marion	100	100	100	85	100	75	100	100
Nassau	100	100	100	100				
Osceola	100	60	100	60	100	60	100	80
Pasco	120	100	100	100	100	100	100	100
Polk	100	80					100	80
St. Johns	120	120					120	120
Santa Rosa								
Sumter	90	95						
Suwannee								
Wakulla								
Washington								
Gen'l av'ge per cent	101	99	100	88	101	85	102	104

CONDITION OF CROPS—Continued.

COUNTIES.	Horses & Mules	Cattle	Hogs	Sheep	Yield of Tobacco	Yield of Honey	Yield of Wool
	Condition	Condition	Condition	Condition	Pounds	Pounds	Pounds
Alachua	80	90	50	90	....	500	2,000
Baker	100	100	100	90	....	....	2,000
Bradford	100	100	50	....	....	....	....
Brevard	100	100	100	....	....	....	....
Calhoun	100	100	100	100	...	300,000	15,000
Citrus	100	105	90	100	....	....	....
Clay	100	100	110	100	....	500	2.500
Columbia	100	105	100	100	....	1,000	500
Dade	100	100	....	....	....	....	....
Escambia	100	120	120	100	....	15,000	20,000
Franklin	90	95	90	....	....	....	....
Gadsden	125	100	90	100	1,530,000	15,000	1,500
Hamilton	75	90	90	75	....	....	....
Hernando	100	100	80	....	....	....	....
Hillsborough	90	100	90	95	....	....	....
Holmes	95	90	95	...	....	4,000	5,000
Jackson	110	120	110	....	....	....	....
Jefferson	150	110	100	....	....	....	....
LaFayette	100	100	85	....	....	....	....
Lake	....	....	....	....	....	....	....
Lee	100	100	100	..	....	4,000	....
Leon	100	100	100	100	60,000	8,000	1,500
Levy	100	100	100	100	1,000	10,000	5,000
Madison	110	100	90	100	....	....	....
Manatee	100	100	100	....	....	....	....
Marion	100	100	90	....	....	....	15,000
Nassau	....	....	....	....	....	....	....
Osceola	100	100	100	100	....	2,000	50,000
Polk	120	90	100	100	....	1,000	100,000
Pasco	100	100	90	....	....	....	....
St. Johns	100	110	110	110	......	19,000	1,180
Santa Rosa	105	105	100	105	....	5,000	65,000
Sumter	95	100	100	100	....	500	5,000
Suwannee	100	100	100	....	....	....	....
Wakulla	85	100	75	75	....	40,000	300
Washington	100	105	100	100	....	10,000	18,000
General Average Per Cent	101	101	94	97	1,591,000	435.500	309.480

PART II.

WEATHER REPORT.

U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

Central Office: Washington, D. C.

FLORIDA SECTION:

A. J. MITCHELL, Section Director.,

JACKSONVILLE, FLA.

REPORT FOR JUNE, 1904.

SALIENT CLIMATIC FEATURES.

ATMOSPHERIC PRESSURE.

	Inches
Mean, as determined from records of 4 stations	30.01
Departure from the normal, 4 records	0.00
Highest observed, at Jacksonville on the 24thh	30.24
Lowest observed, at Key West and Tampa on the 12th and 11th, respectively	29.74
Absolute range for the State	0.50

TEMPERATURE.

	Degrees.
Mean, as determined from records of 59 stations	79.2
Departure from the normal, 26 records	-0.6
Highest monthly mean, at Marcco	81.2
Lowest monthly mean, at Jacksonville	77.6
Highest recorded, at Lake City on the 19th	102°
Lowest recorded, at Tallahassee on the 13th	52°
Aboslute range for the State	50

PRECIPITATION.

	Inches
Average, as determined from records of 57 stations.	6.17
Departure from the normal, 25 records	–0.84
Greatest amount for any 24 hours, at Molino on the 9th	3.65
Greatest monthly amount, at Myers	14.86
Least monthly amount, at Tallahassee	1.33
Average number of days on which 0.01 or more fell	13

WIND.

Prevailing wind direction	Southwest

WEATHER.

Average number of clear days	10
Average number of partly cloudy days	14
Average number of cloudy days	6

COMPARATIVE TEMPERATURE AND RAINFALL DATA FOR JUNE, WITH DEPARTURES FROM NORMAL, DURING THE PAST THIRTEEN YEARS.

Year	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Mean	78.8	80.2	78.2	79.8	70.8	82.0	80.9	80.4	79.4	79.4	80.7	78.6	70.2
Depar	−1.1	+0.8	−1.7	−0.1	−9.1	+2.1	+2.1	+0 5	−0.5	−0.5	plo.8	−1.1	−0.6
Total	9.03	8.02	6.39	4.46	10.78	4.06	3.08	5.43	0.57	0.77	5.95	6.69	6.17
Depar	+1.85	+0.87	−0.76	−2.69	+3.63	−2.19	−4.07	−1.72	pl2.42	pl2.62	−1.20	−0 58	−9.84

PRESSURE AND WIND TABLE.

STATIONS	Atmospheric Pressure					Wind Velocity in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville	30 03	30.24	24	29.78	11	6,055	33	n	22	100	60	80
Jupiter	30.02	30.19	24	29.76	12	6.956	35	se	25	98	69	82
Key West	29 98	30 15	24	29.74	12	6'856	28	se	10	91	66	76
Pensacola	*30 94	30.20	24	29 75	11	6,903	33	sw	30	88	48	74
Tampa	30.02	30.20	24	20.74	11	4,642	24	ne	24	109	48	79

*8 a. m. reading only.

CLIMATOLOGICAL DATA FOR JUNE, 1904.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Farh.							Precipitation, in inches				Sky.			Prevailing direction of wind.
				Mean.	Departure from the norma .	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Northern Section.																		
Archer	Alachua	92	22	78.6	—0.2	96	4	63	14	31	4.62	—3.48	1.43	14	15	15	0	......
Federal Point	Putnam	10	12	78.2	—0.3	96	22	63	2	30	5.14	—1 52	1.02	19	8	16	6	ne-sw
Fernandina	Nassau	15	3	78 2	—0 8	94	22	67	1	25	4.54	—0.24	1.15	20	11	18	1	se.
Fort George†	Duval	15	19	79.6	+0.3	96	22	72	22	...	......	......	....	...	...	...	...	se.
Gainesville	Alachua	175	18	79.0	—1.4	97	4	64	19*	29	6.08	—0.75	1.20	12	16	10	4	sw
Huntington	Putnam	50	8	78.2	—2.0	98	30	60	19	33	4.52	−4 31	1.10	17	11	18	1	e-sw.
Jacksonville	Duval	43	34	77.6	—2.5	91	22	64	14	19	4.92	—0.53	0.98	17	16	11	3	sw.
Jasper	Hamilton	165	6	....	.....	....	...	...	...	...	3.13	—0.10	1.15	8	17	1	12	sw.
Johnstown	Bradford	125	9	....	.....	....	...	...	...	...	......	......	....	...	...	...	...	......
Lake City	Columbia	201	14	79 3	−1.3	102	19	64	13*	37	6.68	......	2.56	10	3	3	24	sw.
Macclenny	Baker	140	9	78.2	—2.4	99	4	61	15	35	2.86	—0.24	0.84	15	12	8	10	e.
Micanopy	Alachua	105	8	78 6	—1.3	100	4	62	2*	33	......	—4.15	....	...	...	...	...	......
Middleburg	Clay	20	5	79.0	.....	98	27	61	14	32	8.22	......	1.54	19	6	7	17	sw.
Pinemount	Suwannee	103	2	a78.7	.....	a101	5	a62	14	a34	3.65	......	1.20	10	...	...	..	sw.
St Augustine	St. Johns	10	54	78.8	+0.4	96	22	66	3*	26	5.90	—1.02	2.03	16	4	2	24	ne,
Sumner	Levy	23	14	78.0	+0 2	94	4*	61	17	33	5.26	—0.94	1.50	11	8	17	5	sw.
Switzerland	St. Johns	...	8	78.0	+0.3	94	3*	a63	14	h26	4.76	−1.39	1.30	15	...	...	...	......

CLIMATOLOGICAL DATA FOR JUNE, 1904 —Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches				Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Central Section.																		
Bartow	Polk	17	9	80.6	—0.7	97	3	66	19	27	11.76	+3 69	2.69	20	3	27	0	sw.
Brooksville	Hernando	328	12	b79 1	—0 9	b100	4	b63	3*	b34	6.40	—2.56	2.30	10	...	...	...	e.
Clermont	Lake	110	12	....	....	..	..	..	..	..	......	......	....	...	...	...	...	.....
De Land	Volusia	32	4	78.7	....	96	3	64	19	30	......	.....	....	...	8	21	1	e.
Eustis	Lake	180	14	80.3	—0.2	99	3	55	13*	28	6.20	—0.17	2.12	23	5	19	6	se.
Fort Mead	Polk	125	21	79.0	—0.3	100	3*	62	14	34	13.88	+4.62	3.55	18	9	21	0	e.
Fort Pierce	Brevard	25	13	78.6§	-3.1§	95	1	63	11	29	7.39	—2.89	1.88	11	16	2	12	se.
Grasmere	Orange	175	8	80.0	—0.8	97	3*	66	19	28	......	......	....	...	13	15	2	sw.
Inverness	Citrus	43	4	79.6	....	109	3	62	3	38	8.91	......	1.38	14	2	28	0	sw.
Kissimmee	Osceola	65	12	79.3	—1.2	97	3	64	19	29	8.19	+1.08	1.50	14	8	6	16	sw.
Malabar	Brevard	..	3	79.0	.....	96	1	66	28	28	7.07	......	1.39	18	15	12	3	se.
Merritt's Island	Brevard	20	23	78.8	—0.2	92	2	68	19	22	7.58	+0 62	2.53	13	12	13	5	se.
New Smyrna	Volusia	20	16	78.3	—0.7	110	1	61	19	33	5.45	—0.65	1.40	9	..	...	...	se.
Ocala	Marion	150	17	79.6	+0.5	100	3*	64	3*	36	5.50	—2.91	2.10	14	5	13	12	e.
Orange City	Volusia	50	14	80.3	—0.9	101	3	63	3	38	7.21	+0.08	1.84	14	6	22	2	e.
Orange Home	Sumter	75	...	79.6	.....	100	3	63	3	37	6.96	......	1.26	13	9	16	5	......

CLIMATOLOGICAL DATA FOR JUNE, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches				Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Total.	Departure from the normal.	Greatest in 24 hour.	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	
Orlando	Orange	98	17	.....	.....	....	...	..	...	...	.....	.....	....	...	...	...	...	.....
Plant City	Hillsbor'gh	121	12	79.4	—0.9	99	3	63	3*	36	8.55	—0.19	1.60	10	...	..	...	.....
Rockwell	Marion	...	5	80.2	. .	99	6	61	14	36	5.08	......	1.38	13	7	6	17	se.
St. Leo	Pasco	140	10	79.0	—2.3	101	3	62	3	39	10.55	+3.44	1.88	19	7	21	2	e.
Tampa	Hillsbor'gh	20	14	79.5	—0.5	95	4	65	13	23	6.72	—2.51	1.76	10	9	20	1	e.
Tarpon Springs	Hillsbor'gh	20	20	78.5	—1.3	92	5*	63	13	26	2.21	—6.99	0.49	10	12	15	3	w.
Titusville	Brevard	11	13	78.8	—0.9	99	2	63	19	33	7.09	—0.76	2.66	26	1	8	21	se.
Southern Section.																		
Avon Park	De Soto	150	8	79.4	—1.0	97	2	66	19	30	10.35	+1.14	1.44	22	6	20	4	se.
Flamimgo	Monroe	11	4	80.2	. ...	90	2	70	27	16	5.25	......	2.00	8	18	6	6	ne.
Hypoluxo	Dade	...	8	78.2	—1.1	89	1*	64	27	21	11.05	+0.18	3.00	15	10	16	4	se.
Jupiter	Dade	28	17	78.4	—0.6	90	1	68	27	19	10.54	+4.05	2.46	18	4	16	10	se.
Key West	Monroe	22	34	81.1	—1.4	87	24	74	6	12	1.70	—2.30	0.41	12	12	14	4	se.
Manatee	Manatee	16	21	79.4	—0.9	97	4	62	3	33	8.18	—0.06	1.92	17	1	28	1	se.
Marco	Lee	...	4	81.2	.....	93	3*	62	20	28	8.14	......	1.53	15	21	4	5	e.
Miami	Dade	...	8	79.6	—1.5	90	2	61	27	21	6.06	—2.08	1.30	10	5	20	5	se.
Myers	Lee	19	21	78.6	—1.3	94	3	68	8*	25	14.86	+4.03	1.60	18	16	12	2	s.
Nocatee	De Soto	43	5	80.0	.....	98	3	66	3*	32	8.79	......	2.60	13	1	18	16	e.

CLIMATOLOGICAL DATA FOR JUNE, 1904.—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range	Precipitation, in inches Total.	Departure from the normal.	Greatest in 24 hours.	Number rainy days.	Sky. Number clear days.	Number partly cloudy days.	Number cloudy days	Prevailing direction of wind.
Western Section.																		
Apalachicola	Franklin	...	...	79.6	.....	§90	4*	62	17	26	3.84	......	1.02	6	17	8	5	sw.
Bonifay	Holmes	116	3	79.4	.....	98	5	61	15*	35	4.00	......	1.35	6	4	14	12	s.
Carrabelle	Franklin	12	9	79.9	—0.9	93	4*	61	13	28	3.13	—0.53	0.90	9	17	0	13	sw.
DeFuniak Sp'gs	Walton	193	8	78.2	—1.8	98	5	60	15*	36	4.47	—3.09	1.45	11	15	9	6	s.
Madison	Madison	...	...	78.8	.....	98	4	62	14	27	6.29	......	1.50	8	24	6	0	ew.
Marianna	Jackson	85	5	79.6	.....	100	5*	57	13	36	3.67	......	1.24	8	11	18	1	sw.
Milton	Santa Rosa	...	...	.....	.....	...	...	...	...	...	......	......	.....	...	...	...	...	......
Molino	Escambia	49	1	k79.0	.....	k101	24*	k56	24	k45	6.85	......	3.65	6	...	...	...	......
Monticello	Jefferson	207	...	79.2	.....	97	4	63	14	30	4.04	......	0.87	7	7	21	2	se.
Pensacola	Escambia	56	25	79.4	—0.0	90	11	69	25	20	2.58	—2.78	1.06	3	11	15	4	w.
Quincy	Gadsden	260	4	.....	.....	...	...	...	...	...	......	......	.....	...	...	...	...	......
St. Andrew	Washington	12	7	79.4	—1.0	95	4*	61	16*	31	4.30	—2.42	1.36	9	19	11	0	s.
Stephensville	Taylor	...	5	78.0	.....	95	4*	55	2	35	1.93	......	0.98	4	3	27	0	sw.
Tallahassee	Leon	193	19	81.0	+2.2	97	4*	52	13	34	1.33	—5.03	0.70	5	9	18	3	s.
Wausau	Washington	250	7	79.0	—2.1	100	18	59	15	39	5.30	......	1.17	8	10	19	4	sw.
Wewahitchka	Calhoun	...	5	80.7	.....	98	20*	63	14	31	1.87	......	0.69	5	3	6	7	s.
	State Means	...	...	79.2	—0.6	...	...	...	...	...	6.17	—0.84	....	13	10	14	6	sw.

All records are used in determining State means, but the mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation.

a, b, c, etc., following name of station, indicate number of days missing from report.

†Thermometers are not self-registering, and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily.

*More than one day. ‡Weather Bureau. §Not included in averages.

PART III.

FERTILIZERS.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

STATE VALUATIONS, 1904.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1904.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen).	15 cents a pound
Potash (as actual potash, K2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.00 per unit
Potash	$1.10 per unit

With a uniform allowance of $1.25 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid	6.22 per cent.	x$1.00—	6.22
Insoluble Phosphoric Acid	1.50 per cent.	x .20—	.30
Ammonia	3.42 per cent.	x 3.00—	10.26
Potash	7.23 per cent.	x 1.10—	7.95
Mixing and bagging			1.25
Commercial value at sea ports			25.98

Or a fertilizer analyzing as follows:

Available phosphoric acid	8 per cent.	x$1.00—$	8.00
Ammonia	2 per cent.	x 3.00—	6.00
Potash	2 per cent.	x 1.10—	2.20
Mixing and bagging			1.25
Commercial value at sea ports			$17.45

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of ten per cent. can be made in above valuations, *i, e.*:

Available Phosphoric Acid - - 90 cents per unit
Potash (K2O) - - - - 99 cents per unit
Ammonia (or equivelent in nitrogen) $2 70 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

MARKET PRICES OF CHEMICALS AND FERTILIZING MATERIALS AT SEA PORTS, JAN. 4, 1904.

Ammoniates.	Less than 5 tons	5 to 10 tons.	10 tons & over.
Nitrate of Soda 17 per cent. Ammonia	$50.00	$49.00	$49.00
Sulphate of Ammonia 25 per cent Ammonia	71.00	70.50	70.00
Dried Blood 16 per cent. Ammonia	54.00	53.50	53.00
POTASH.			
High Grade Sulphate Potash 48 per cent. Potash (K2O)	52.00	51.00	50.00
Low Grade Sulphate Potash 26 per cent. Potash (K2O)	32.00	31.00	30.00
Muriate of Potash 50 per cent. Potash (K2O)	46.00	45.00	44.00
Nitrate Potash, 13 Am., 42 Potash (K2O)	82.00	81.00	80.00
Kainit 12 per cent. Potash	14.00	13.50	13.00
Canada Hardwood Ashes 4 per cent. (K2O) Potash	17.00	16.50	16.00
AMMONIA AND PHOSPHORIC ACID.			
High Grade Blood and Bone, 10 10 per cent. Ammonia 7 per cent. Phosphoric Acid	35.00	34.50	34.00
Low Grade Blood and Bone, 6½ per cent. Ammonia, 8 per cent. Phosphoric Acid	27.00	26.50	26.00
Owl Brand Tankage, 5½ per cent. Ammonia	20.00	19.50	19.00

Raw Bone 4 per cent. Ammonia 22 per cent. Phosphoric Acid..	29.00	28.50	28.00
Ground Castor Pomace 6 per cent. Ammonia, 2 per cent. Phosphoric Acid	22.00	21.50	21.00
Bright Coton Seed Meal 8 per cent. Ammonia market quotations	26.00	25.50	25.00
Dark Coton Seed Meal, 5 per cent Ammonia, market quotations	18.00	17.50	17.00

PHOSPHORIC.

Double Super Phos., 45 per cent. Available Phosphoric Acid ...	45.00	44.50	44.00
High Grade Acid Phosphate, 16 per cent. Available Phosphoric Acid	16.00	16.50	15.00
Acid Phosphate 14 per cent. Available Phosphoric Acid....	14.00	15.50	13.00
Boneblack 17 per cent. Available Phosphoric Acid	25.00	24.50	24.00

MISCELLANEOUS.

H. G. Ground Tobacco Stems, 3 per cent. Ammonia, 9 per cent Potash	25.00	24.50	25.00
Pulverized Ground Tobacco Stems	16.00	15.00	15.00
Tobacco Dust, No. 1, 3 per cent. Ammonia, 2 K20 Potash......	21.00	20.50	20.00
Tobacco Dust, No. 2, 1½ per cent. Ammonia, 1½ per cent. Potash.	16.00	15.50	15.00
Dark Tobacco Stems, baled.....	16.00	15.50	15.00
Land plaster in sacks	10.50	10.25	10.00

Any formula will be mixed at the price of $1.25 per ton, in addition to the cost of the materials used.

FACTORS FOR CONVERSION.

To convert—

Ammonia into Nitrogen, multiply by	0.824
Ammonia Protein by	5.15
Nitrogen into ammonia, multiply by	1.214
Nitrate of soda into nitrogen, multiply by	16.47
Nitrogen, into protein by	6.25
Bone phosphate into phosphoric acid, multiply by	0.458
Phosphoric Acid into Bone Phosphate, multiply by	2.184
Muriate of Potash into actual potash, multiply by	0.632
Actual potash into muriate of potash, multiply by	1.583
Sulphate of potash into actual potash, multiply by	0.541
Actual potash into sulphate of potash, multiply by.	

For instance you buy 95 per cent. of nitrate of soda and want to know how much nitrogen in it, multiply 95 per cent. by 16.47 you will get 15.65 per cent nitrogen; you want to know how much ammonia this Nitrogen is equivalent to, then multiply 15.65 per cent. by 1.214 and you get 18.99 per cent., the equivalent in ammonia.

CHEMICAL EQUIVALENTS.

Under the law and the regulations of the department chemical equivalents of the three essential elements, Ammonia, Available Phosphoric Acid, and Potash, are not allowed in the guarantee. A few instances have been noted, particularly in cotton seed meals, when the Ammonia is guaranteed, and followed by a statement of the protein contents:

As. Ammonia ....5 per cent.
Protein ....25.75 per cent.
Or Ammonia ....8 per cent.
Protean ....41.18 per cent.

Such a guarantee is misleading, as the terms "Ammonia" and "Protein," are equivalent, and only represent the "Nitrogen" (or ammonia) content of the goods.

Multiplying the nitrogen by 1.21 gives the ammonia thus, 3 per cent. nitrogen X1.21 gives ammonia 3.63 per cent. or nitrogen 3 per cent. X625 gives "Protein" 18.75 per cent.

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS.

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda	17 to 19		
Sulphate of Ammonia	21 to 24		
Dried Blood	12 to 17		
Concentrated Tankage	12 to 15	1 to 2	
Bone Tankage	6 to 9	10 to 15	
Dried Fish Scrap	8 to 11	6 to 8	
Cotton Seed Meal	7 to 10	2 to 3	1½ to 2
Hoof Meal	13 to 17	1½ to 2	

PHOSPHATE MATERIALS.

	Pounds per Hundred.		
	Ammonia	Available Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphte			26 to 32
Florida Rock Phosphate			33 to 35
Florida Super Phosphate		14 to 19	1 to 6
Grounded Bone	3 to 6	5 to 8	15 to 17
Steamed Bone	2 to 4	6 to 9	10 to 20
Dissolved Bone	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actual Potash	Am'nia	Phosphoric Acid	Lime
Muriate of Potash	50			
Sulphate of Potash	48 to 52			
Double Sul. of Pot. & Mag.	26 to 30			
Kainit	12 to 12½			
Sylvinit	16 to 20			
Cotton Seed Hull Ashes	15 to 30		to 9	10
Wood Ashes, unleached	2 to 8		to 2	30 to 25
Wood Ashes leached	1 to 2		to 1½	35 to 40
Tobacco Stems	5 to 8	2 to 4		3½
Cow Manure (fresh)	0.40	0 to 41	0.16	0.31
Horse Manure (fresh)	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)	0.67	1.00	0.23	0.33
Hog Manure (fresh)	0.60	0.55	0.19	0.08
Hen Dung (fresh)	0.85	2.07	1.54	0.24
Mixed Stable Manure	0.63	0.76	0.26	0.70

SPECIAL NOTICE.

The attention of persons sending samples of fertilizers for analysis is called to the following:

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER SAMPLES TO THE COMMISSIONER OF AGRICULTURE.

—SECTION 15 OF LAW.

Special samples of fertilizer sent in by purchasers, under Sec. 9 of the law approved May 22, 1901. Shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoroughly mixed and a FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICULTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN OR BOTTLE, WILL BE ACCEPTED FOR ANALYSIS. This rule is adopted to secure fair samples of sufficient size to make the six necessary determinations, viz: Moisture, available and insoluble phosphoric acid, ammonia and potash; and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means, of identification. The post mark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

COPIES OF THE FERTILIZER LAW.

Citizens interested in the fertilizer law of the State, and desiring to avail themselves of its protection, can obtain a copy free of charge by sending for same to the Commissioner of Agriculture.

CAUTION TO PURCHASERS OF COTTON SEED MEAL.

The attention of consumers of cotton seed meal, either for stock feeding or fertilizing purposes, is called to the analysis of various brands.

Pure, bright cotton seed meal shows a content of 8 per cent and above in ammonia, 2 per cent or more of available phosphoric acid, and 1½ per cent. of potash. Such meal is now selling at $26.50 per ton at seaport. Its Commercial value is as follows:

8 per cent. ammonia @ $3.00	$24.00
2 per cent. available phosphate @ $1.00	2.00
1½ per cent. potash @ $1.10	1.65
	$27.65

The commercial value being in excess of the market value.

There is a quantity of adulterated cotton seed meal sold in the State, These goods are guaranteed as follows:

4½ to 5 per cent. ammonia.
1¾ to 2 per cent. phosphoric acid.
1½ to 2 per cent, potash.

Their commercial value compared to pure meal is as follows:

4½ per cent. ammonia	$13.50
1¾ per cent. phosphoric acid	1.75
1½ per cent. potash	1.65
Commercial value	$16.90

These goods are sold at $1.00 to $2.00 per ton less than prime meal Their relative value is $10.75 less than prime meal. There is no economy in the use of such goods; on the contrary, a direct loss. This applies as forcibly to the feeder, or dairyman, as it does to the planter, the value of the meal depending only on its content of ammonia, phosphoric acid and potash in both cases. Purchasers should buy according to the analysis and pay for the actual content of the valuable elements only.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. MARION G. DONK, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.
(Samples taken by purchaser).

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT.
			Available	Insoluble	Total			
Special Mixture	473	.....	7.35	2.26	9.61	4.60	9.03	T. Kimball, St. Petersburg, Fla.
Fertilizer	474	.....	8.62	0.46	9.08	1.64	13.32	F. S. Hickock, Hastings, Fla.
Bone Compound (No. 1)..	476	19.00	9.75	2.67	12.42	2.20	1.62	John M. Calhoun, Marianna, Fla.
Acid Phosphate (No. 2)..	477	22.45	12.61	2.51	22.45	.....	.....	John M. Calhoun, Marianna, Fla.
Special Mixture	478	.....	6.08	0.76	6.84	4.36	7.86	R. D. Knight, Little River, Fla
Kentucky Brand—Pulverized Tobacco Stems....	479	.....	.....	.....	.....	2.89	10.14	Willson & Toomer Fert. Co., Jacksonville, Fla.
Cotton Seed Meal	480	.....	.....	.....	.....	7.02	.....	Schroeder & Auguinbaw, Quincy.
Fertilizer	481	14.25	4.90	0.32	5.22	3.57	12.99	J. F. Adams, Winter Park, Fla.
Sulphate of Potash	483	.....	.....	.....	.....	.....	50.48	Thos. W. Williams, Tampa, Fla.
Fertilizer	484	9.85	6.78	1.70	8.48	6.15	6.77	J. G. Powers, Terra Ceia, Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid.			Ammonia.	Potash (K2O)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Sea Island Cotton Seed...	485	.....	.....	.....	.....	4.14	.....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	486	.....	.....	.....	.....	4.92	.....	Florida Mfg. Co., Madison, Fla.
Sea Island Cotton Seed M'l	487	.....	.....	.....	.....	5.62	.....	Florida Mfg. Co., Madison, Fla.
Fertilizer	488	.....	5.20	0.77	5.97	1.86	13.15	H. O. Wordenhoff, Plant City, Fla
Fertilizer (light)	489	.....	7.56	1.59	9.15	4.65	7.61	Mrs. E. M. Lane, Delray, Fla.
Fertilizer (dark)	490	.....	6.12	0.66	6.78	4.28	7.24	Mrs. E. M. Lane, Delray, Fla.
Dried Blood	491	.....	.....	.....	.....	14.85	.....	J. T. Stanley, Jensen, Fla.
Raw Ground Bone	492	.....	9.53	13.98	23.50	4.50	.....	J. T. Stanley, Jensen, Fla.
Wood Ashes	493	.....	.....	.....	.....	.....	0.24	J. T. Stanley, Jensen, Fla.
Ground Tobacco Stems ..	494	.....	.....	.....	.....	3.18	9.28	J. T. Stanley, Jensen, Fla.
Cotton Seed Meal	495	.....	.....	.....	.....	7.75	.....	Schroeder & Auguinbaw, Quincy.
Cotton Seed Meal	496	.....	.....	.....	.....	7.71	.....	James B. Bours, Jacksonville, Fla
Acid Phosphate	497	.....	18.74	0.75	19.49	.....	.....	Goulding Fert. Co., Pensacola.
Fertilizer (acid phosphate)	498	14.40	13.64	0.53	14.17	0.00	0.00	J. D. Clark, Mt. Pleasant, Fla.
Fertilizer No. 1..........	499	11.30	7.05	1.01	8.06	4.60	8.42	B. G. Hewet, Pebble, Fla.

NAME OF BRAND.	Laboratory No.	Moisture.	Phosphoric Acid.			Ammonia	Potash (K20.)	BY WHOM SENT.
			Available.	Insoluble.	Total.			
Fetilizer No. 2	500	11.35	7.10	1.16	8.26	4.51	8.49	B. G. Hewet, Pebble, Fla.
Fertilizer	501	. ...	0.00	0.00	0.00	4.42	0.00	Peter Gardener, Palatka, Fla.
Guano	502	.....	.....	.....	26.13	3.71	3.14	James Holmes, Jensen, Fla.
Acid Phosphate	503	.....	13.68	2.05	15.73	.....	.....	Prof. O. J. Moore, Lisbon, Fla.
Crude Carbonate of Potash	504	.....	.....	.....	.....	.....	38.85	J. Hirschburg, Tallahassee, Fla.
White Carbonate of Potash	505	.....	.....	.....	.....	.....	62.62	J. Hirschburg, Tallahassee, Fla.
Fertilizer	506	10.85	7.30	1.26	8.56	3.18	3.52	W. M. Girardeau, Monticello, Fla.
Fertilizer	507	.....	9.71	1.56	11.27	5.36	7.68	P. L. Fiveash, Alliance, Fla.
Fertilizer	508	7.35	8.12	1.20	9.32	4.01	8.71	C. B. Robbinson, Corno, Fla.
Cotton Seed Meal	509	.....	.....	.....	.....	7.13	.....	J. E. Wirick, Jr., Lloyd, Fla.
Fertilizer	510	.....	6.10	5.57	11.67	2.08	8.46	R. L. McMullen, Clearwater, Fla.

NAME OR BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	511	10.45	9.99	1.96	8.95	4.63	4.86	Johnson & Co., Leesburg, Fla.
Fertilizer No. 1...........	512	.10	7.87	0.73	8.60	2.24	1.28	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 2...........	513	1 .15	9.11	3.00	12.11	2.12	1.84	J. W. McKeown Co., Concord, Fla.
Fertilizer No. 3...........	514	10.10	8.43	2.68	11.11	2.13	2.15	J. W. McKeown Co., Concord, Fla.
Ferilizer No. 4...........	514	11.30	10.52	3.26	13.78	2.47	1.89	J. W. McKeown Co., Concord, Fla.
Blood, Bone and Potash..	516	14.20	9.91	2.95	9.86	3.80	4.44	J. H. Dishong, Dover, Fla.
Dark Cotton Seed Meal and Potash	518	.25	.....	.....	2.03	5.02	3.81	R. L. Goodwin, St. Pierce, Fla.
Ground Tobacco Stems ..	519	.....	.....	.....	.....	2.92	9.24	Armour Fertilizer Works, Jacksonville, Fla.
Fertilizer	520	14.61	7.75	2.76	10.51	2.29	2.23	J. H. Hinton, Dover, Fla.
Fertilizer No. 3	521	6.95	8.49	1.95	10.44	2.15	13.71	E. J. Yates, Lakeland, Fla.
Fertilizer No. 2	522	10.95	7.22	1.39	8.61	4.46	8.07	E. J. Yates, Lakeland, Fla.
Fertilizer No. 1...........	523	1 .25	8.17	3.02	11.19	2.22	2.26	E. J. Yates, Lakeland, Fla.
Fertilizer	524	9.25	8.63	0.72	8.75	4.44	11.44	H. Price Williams, Miami, Fla.
Rock Phosphate	525	.....	.....	.....	37.16	.....	.....	T. D. Hawkins, King's Ferry, Fla.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	526	10.90	7.74	2.96	10.70	4.87	13.79	S. B. Robbinson, Seven Oaks, Fla.
Armour's H. G. Tobacco. Dust	527	.....	.....	.....	.....	2.60	3.91	Armour Fert. Wks., Jacksonville.
Fertilizer	528	14.00	5.61	3.01	8.61	4.43	5.65	H. J. Drane, Lakeland, Fla.
Fertilizer	529	10.20	7.12	3.00	10.12	4.37	15.56	F. G. Sampson, Boardman, Fla.
Dark Cotton Seed Meal...	530	.....	.....	.....	1.94	4.99	1.49	N. H. Fogg, Altamonte Springs.
Bright Cotton Seed Meal.	531	.....	.....	.....	2.91	8.37	1.81	N. H. Fogg, Altamonte Springs.
Rock Phosphate..	532	.....	.....	.....	34.05	.....	.....	John S. Flanagan, San Antonia.
Ashes	533	.....	.....	.....	.....	.....	0.60	A. J. Rosetter, Enterprise, Fla.
Fertilizer	534	.....	1.63	0.77	2.40	4.00	7.08	W. J. Dyer, Stuart, Fla.
Fertilizer No. 1.........	535	.....	6.08	0.85	6.93	4.20	9.34	A. P. DeWolf, Crescent City.
Fertilizer No. 2 (Sulphate Potash).	536	.....	.....	.....	.....	.....	47 24	A. P. DeWolf, Crescent City.
Fertilizer	537	.....	9.72	3.12	12.84	2.00	1.69	L. A. Adams, Luanna, Fla.
Fertilizer	538	.....	7.22	4.12	11.34	2.25	2.37	R. L. West, Plant City, Fla.
Rock Phosphate	539	.....	.....	.....	33.46	.....	.....	John D. Philips, Bailey, Fla.

NAME OF BRAND.	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Fertilizer	540	.....	5.28	1.38	6.66	3.48	7.84	S. P. Lamb, Anthony, Fla.
Cotton Seed Meal	541	.....	.....	.....	2.29	6.78	1.71	J. E. Snow, East Lake, Fla.
Tobacco Ashes	542	.....	.....	.....	2.53	.....	12.12	James Holmes, Jensen, Fla.
Muck Soil	543	.....	.....	.....	0.39	1.61	Tr.	W. Lippencott, Lakeland, Fla.
Fertilizer	544	.....	7.60	9.05	15.05	3.41	12.36	L. C. Hefner, St. Petersburg, Fla.
Cotton Seed Meal	546	.....	.....	.....	.....	6.84	.....	Lewis Lively, Tallahassee, Fla.
Fertilizer	547	.....	11.08	2.67	13.75	2.82	1.87	Jas. B. Holmes, Jensen, Fla.
Wood Ashes	548	.....	.....	.....	.....	.....	0.68	Chase & Co., Sanford Fla.
Fertilizer	549	.....	7.94	1.86	9.80	5.28	17.02	S. B. Robinson, Seven Oaks, Fla.
Fertilizer	550	.....	10.55	0.61	11.16	1.85	2.58	A. W. Turner, Coe's Mills, Fla.
Fertilizer	551	.....	5.39	0.37	5.76	2.65	10.90	Horrace Prior, Como, Fla.
Fertilizer	552	.....	9.25	1.66	10.91	1.50	0.97	Alexander & Baird, Beresford, Fla
Fertilizer	553	15.33	7.31	.....	7.31	.....	2.61	C. C. Wills, Woods, Fla.
Bright Cotton Seed Meal	554	.....	.....	.....	.....	7.57	.....	J. W. Scott, Quincy, Fla.
Dark Cotton Seed Meal	555	.....	.....	.....	.....	6.82	.....	J. W. Scott, Quincy, Fla.

BURAUE OF FERTILIZERS—Continued.

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	BY WHOM SENT
			Available	Insoluble	Total			
Ashes	556	.....	.....	.....	1.08	.....	2.28	John J. Beers, Emporia, Fla.
Cotton Seed Meal	557	.....	.....	.....	2.44	6.77	1.73	J. W. Scott, Quincy, Fla.
Dissolved Animal Bone	558	.....	9.86	5.85	15.71	2.67	.....	Florida Fert. Co., Gainesville.
Fertilizer	559	.....	7.22	0.36	7.58	4.36	5.91	Rome Tinny, Ozond, Fla.
Raw Bone Meal	560	.....	.....	.....	25.86	4.14	.....	Jas. B. Holmes, Jensen, Fla.
Fertilizer No. 1	561	9.05	6.58	0.48	7.06	4.48	11.23	J. C. Cowburn, Crescent City, Fla.
Fertilizer No. 2	562	7.10	6.39	0.68	7.07	4.42	12.86	J. C. Cowburn, Crescent City, Fla.
Fertilizer	563	14.50	9.67	1.14	10.81	2.12	6.37	E. V. Lundbery, Crescent City, Fla
H. G. Acid Phosphate No. 1	564	13.40	43.49	0.33	43.82	.....	.....	O. B. Robinson, Lake Como, Fla.
Fertilizer No. 2	565	10.55	6.75	0.81	7.56	3.96	6.97	O. B. Robinson, Lake Como, Fla.
Fertilizer No. 3	566	11.95	5.84	0.73	6.57	3.89	7.20	O. B. Robinson, Lake Como, Fla.
Fertilizer	567	.....	.....	.....	2.20	5.62	6.06	Geo. W. Rufle, Ft. Pierce, Fla.
Fertilizer No. 1	568	.....	7.45	3.55	11.00	2.72	11.55	Wm. Edwards, Plymouth, Fla.
Fertilizer No. 2	569	.....	8.24	7.20	15.44	2.38	9.61	Wm. Edwards, Plymouth, Fla.
Fertilizer No. 3	570	.....	8.67	7.85	15.52	2.98	9.46	Wm. Edwards, Plymouth, Fla.

NAME OF BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K1)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer	571	8.25	7.35	0.32	7.67	3.74	12.28	J. C. Hull, Orlando, Fla.
Cotton Seed Meal	572	.....	.....	.....	2.23	6.46	1.56	A. M. Munroe, Crown Point, Fla.
Bone Meal	573	.....	.....	.....	26.52	4.53	.....	James Holmes, Jensen, Fla.
Tobacco Dust	574	.....	.....	.....	.....	2.99	8.92	James Holmes, Jensen, Fla.
Rock Phosphate	575	.....	.....	.....	35.77	.....	.....	J. S. Flanagan, San Antonia, Fla.
Special Mixture No. 2	576	.....	8.21	0.30	8.51	4.57	13.40	F. D. Waite, Palmetto, Fla.
Special Mixture No. 1	577	.....	6.55	0.30	6.85	6.00	12.58	F. D. Waite, Palmetto, Fla.
Dissolved Animal Bone Black	578	.....	.....	.....	21.09	.....	.....	F. D. Waite, Palmetto, Fla.
Nitrate of Soda	579	.....	.....	.....	.....	17.48	.....	F. D. Waite, Palmetto, Fla.
Nitrate of Soda No. 2	580	.....	.....	.....	.....	15.89	.....	F. D. Waite, Palmetto, Fla.
Sulphate of Ammonia	581	.....	.....	.....	.....	25.21	.....	F. D. Waite, Palmetto, Fla.
H. G. Sulphate of Potash	582	.....	.....	.....	.....	.....	49.08	F. D. Waite, Palmetto, Fla.
H. G. Acid Phosphate	583	.....	17.51	0.40	17.91	.....	.....	F. D. Waite, Palmetto, Fla.
Special Mixture	584	.....	5.15	2.13	7.28	6.19	8.18	C. F. Olmstead, Ft. Pierce, Fla.
Ground Kentucky Tobacco Stems	585	.....	.....	.....	.....	2.24	8.92	L. B. Abdill, Eldred, Fla.
Cotton Seed Meal	586	.....	.....	.....	.....	7.11	.....	L. B. Abdill, Eldred, Fla.

For values see heading "Bureau of Fertilizers."

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample" sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on followng pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a "Special Sample."

Special attention is called to the "Caution to Purchasers of Cotton Seed Meal" on another page. This adulterated meal is sold as bright or prime meal---though the guarantee is but 4½ per cent. of ammonia---it is evidently adulterated with rice hulls, its value is but little more than half that of prime meal.

R. E. ROSE, STATE CHEMIST, ANALYSIS OF FERTILIZERS, 1904, MARION G. DONK, ASSISTANT CHEMIST.
Samples taken by State Chemist under Section 1, Act approved May 22 1901.

NAME OF BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Cotton Seed Meal	311	Guarant'd Analysis.	......	......	......	......	7.35	......	Southern Cotton Oil Co., Washington, Ga.
		Official Analysis....	......	......	......	......	8.12	......	
Tobacco Dust	312	Guarant'd Analysis.	......	......	......	......	1.20	2.50	Tampa Fert. Co, Tampa, Fla.
		Official Analysis....	......	......	......	......	1.38	2.80	
Hard Wood Ashes	313	Guarant'd Analysis.	......	......	......	......	......	5.50	Blackshear Manufa'g Co., Blackshear, Ga.
		Official Analysis....	......	......	......	......	......	4.60	
H G. Dissolved Bone Black	314	Guarant'd Analysis.	10.00	16.00	......	......	......	......	Armour Fert. Co., Jacksonville.
		Official Analysis....	11.30	20.26	0.29	20.55	......	......	
Acid Phosphate	315	Guarant'd Analysis.	......	14.00	......	......	......	......	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	13.90	13.76	0.35	13.90	......	......	

Steamed Bone Flour	316	Guarant'd Analysis.	......	......	......	23.00	3.00	......	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	5.75	13.38	13.46	26.84	3.85	......	
H. G Vegetable Manure.	317	Guarant'd Analysis.	10 00	5 00	2 00	.....	4 00	6 00	Tampa Fert. Co., Tampa, Fla.
		Official Analysis....	12 10	7 64	2 05	9 69	4 16	5 98	
Fruit and Vine Manure.	318	Guarant'd Analysis.	8 00	6 00	1 00	......	2 00	12 00	Tampa Fert. Co , Tampa, Fla.
		Official Analysis....	8 95	8 31	0 64	8 95	2 42	11 09	
Ober's Fruit and Vine..	319	Guarant'd Analysis.	11 00	6 00	2 00	......	2 50	10 00	Oberr & Sons, Baltimore, Md.
		Official Analysis....	6 95	8 93	1 54	10 47	3 27	9 36	
Ober's Vegetable Manure..................	320	Guarant'd Analysis.	14 00	6 00	1 00	......	5 00	6 00	Ober & Sons, Baltimore, Md.
		Official Analysis....	13 70	7 87	1 78	9 65	5 43	5 96	
Baugh's Special Orange Tree..................	321	Guarant'd Analysis.	12 00	5 00	2 00	......	2 00	10 00	Baugh & Sons, Baltimore, Md.
		Official Analysis....	6 20	8 18	1 97	10 15	2 39	9 69	
Baugh's Vegetable Manure..................	322	Guarant'd Analysis.	12 00	6 00	4 00	......	5 00	7 00	Baugh & Sons, Baltimore; Md.
		Official Analysis....	13 35	6 71	1 71	8 42	5 48	6 88	
Double Strength of Potash..................	323	Guarant'd Analysis.	10 00	5 00	2 00	......	1 50	10 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	7 55	6 65	1 09	7 74	2 05	11 40	
Peruvian and Fish Guano.............. ..	324	Guarant'd Analysis.	10 00	5 00	1 00	......	4 50	5 00	Florida Fertilizer Co., Gainesville, Fla.
		Official Analysis....	8 35	6 22	2 44	8 66	4 92	6 58	
Potato Mixture.........	325	Guarant'd Analysis.	10 00	5 00	2 00	......	3 00	9 00	Florida Fertilizer Co. Gainesville, Fla.
		Official Analysis....	7 90	4 99	2 53	7 52	3 79	8 23	

ANALYSIS OF FERTILIZERS—Continued.

Peruvian & Fish Guano Double strength of Potash	326	Guarant'd Analysis.	......	5 00	1.00	......	4 50	10 00	Florida Fertilizer Co.,
		Official Analysis....	7 00	6.35	4.65	11.00	4.09	9 56	Gainesville, Fla.
Orange Tree Fertilizer	327	Guarant'd Analysis.	9 00	5 00	2 00	......	3 00	10 00	Standard Fertilizer Co.,
		Official Analysis...	5 20	5 62	1 83	7 45	3 74	10 78	Gainesville, Fla.
Vegetable Fertiliz'r No 1	328	Guarant'd Analysis.	8 00	4 00	2 00	.....	4 50	5 00	Standard Fertilizer Co.,
		Official Analysis....	8 80	3 95	2 76	6 71	4 41	6 04	Gainesville, Fla.
Fish and Potash	329	Guarant'd Analysis.	9 00	3 00	2 00	......	6 00	5 00	Standard Fertilizer Co.,
		Official Analysis....	9 90	3 19	1 29	4 48	6 35	6 66	Gainesville, Fla.
Bean Special	3 0	Guarant'd Analysis.	8 00	4 00	3 00	......	3 50	8 00	Standard Fertilizer Co.,
		Official Analysis....	4 90	4 24	3 04	7 28	4 61	7 85	Gainesville, Fla.
Cuke Special	331	Guarant'd Analysis.	9 00	3 50	2 00	......	4 00	8 00	Standard Fertilizer Co.,
		Official Analysis....	4 75	3 15	2 21	5 36	4 24	8 52	Gainesville, Fla.
Early Trucker	332	Guarant'd Analysis.	7 00	4 00	2 00	.....	5 00	5 00	Standard Fertilizer Co.,
		Official Analysis....	6 80	3 52	1 98	5 50	5 43	5 09	Gainesville, Fla.
Lettuce Special	333	Guarant'd Analysis.	9 00	4 00	2 00	......	6 00	6 00	Standard Fertilizer Co.,
		Official Analysis....	4 95	4 74	2 81	7 28	6 06	6 99	Gainesville, Fla.
Strawberry Special Fertilizer	334	Guarant'd Analysis.	8 00	6 00	......	......	3 00	5 00	Va.-Car. Chem. Co., Sa-
		Official Analysis....	9 80	5 91	2 22	8 13	3 98	5 14	vannah, Ga.

ANALYSIS OF FERTILIZERS—Continued.

Champion Citrus Compound	335	Guarant'd Analysis.	10 00	6 00	......	......	3 00	14 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 25	5 86	0 93	6 77	4 03	11 50	
Old Dominion Potato Manure	336	Guarant'd Analysis.	8 00	7 00	.....	.....	5 00	8 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	14 50	5 37	1 10	6 51	5 09	8 42	
Special Vegetable Grower	337	Guarant'd Analysis.	8 00	8 00	.....	......	3 00	3 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 12	8 28	1 80	10 08	3 01	3 06	
Tiptop Tomato Trucker.	338	Guarant'd Analysis.	8 00	7 00	......	.....	4 00	5 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	12 55	7 23	1 70	8 93	4 59	5 16	
Fruit and Vine	339	Guarant'd Analysis.	8 00	6 00	...	......	2 50	10 00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	11 35	5 88	1 03	6 91	3 09	9 81	
Southern States Special.	340	Guarant'd Analysis.	......	6 00	......	......	4 00	5 00	Va.-Car. Chem. Co, Savannah, Ga.
		Official Analysis....	11 65	8 49	1 53	10 02	3 59	5 98	
Cotton Seed Meal	341	**Guarant'd Analysis.**	....	.....	......	2 50	8 00	1 50	Southern Cotton Oil Co., Pensacola.
		Official Analysis....	....	.....	......	.....	8 68	......	
Sterns Ammoniated Raw Bone	342	Guarant'd Analysis.	15 00	8 00	1 00	......	2 00	2 00	Standard Guano & Chem. M'f'g. Co., New Orleans.
		Official Analysis....	15 75	9 47	2 06	11 53	2 10	1 48	
Baltimore Soluable Bone	343	Guarant'd Analysis.	15 00	10 00	1 00	.....	1 00	1 00	Georgia Chemical Co., Augusta, Ga.
		Official Analysis....	14 95	10 32	3 70	14 11	1 47	1 11	
Cumberland Standard Fertilizers	344	Guarant'd Analysis.	14 00	8 00	1 00	.....	2 00	2 00	Mutual Fertilizer Co., Savannah.
		Official Analysis....	13 40	8 65	0 53	9 17	1 98	1 97	

Scotts H. G. Acid Phosphate	345	**Guarant'd Analysis.**	12 00	14 00	2 00	.....	......	......	Va.-Car. Chem. Co., Montgomery, Ala.
		Official Analysis....	14 00	15 27	1 84	17 11	......	......	
Champion Farmers' Choice	346	**Guarant'd Analysis.**	15 00	8 00	1 00	......	2 00	2 00	Standard Guano & Chem. M'f'g. Co., New Orleans.
		Official Analysis....	11 70	9 38	1 25	10 63	2 37	2 77	
Vegetable Compound...	347	**Guarant'd Analysis.**	16 00	7 00	1 00	.....	4 00	4 00	Goulding Fertilizer Co., Pensacola.
		Official Analysis....	14 05	9 82	1 93	11 75	2 51	4 52	
Baltimore Soluble Bone	348	**Guarant'd Analysis.**	15 00	10 00	1 00	......	1 00	1 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	13 75	10 06	2 03	12 14	0 84	0 93	
Bone and Potash.......	349	**Guarant'd Analysis.**	15 00	10 00	1 00	.....	......	2 00	Georgia Chemical Works, Augusta, Ga.
		Official Analysis....	12 30	10 82	2 57	13 39	......	1 84	
H G. Acid Phosphate	350	**Guarant'd Analysis.**	16 00	15 00	1 00	.....	.....	......	Goulding Fertilizer Co., Pensacola, Fla.
		Official Analysis....	13 20	16 92	0 43	17 35	......	......	
Hard Wood Ashes......	351	**Guarant'd Analysis.**	......	.....	....	.....	......	5 50	W. R Fuller & Co., Tampa, Fla.
		Official Analysis....	.....	.....	.....	.....	......	5 06	
H. G. Sulphate of Potash	352	**Guarant'd Analysis.**	......	......	......	.....	......	50 00	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	.....	......	......	.....	......	50 28	
Acid Phosphat..........	353	**Guarant'd Analysis.**	....	14 00	......	.....	......	......	W. R. Fuller & Co., Tampa, Fla.
		Official Analysis....	14 25	14 75	1 02	15 47	......	......	
Sulphate of Ammonia...	354	**Guarant'd Analysis.**	......	.....	......	.....	24 00	......	Manatee Fertilizer Co., Palmetto, Fla.
		Official Analysis....	......	......	......	......	25.09	......	

Vegetable Fertilizer . . .	355	Guarant'd Analysis.	10.00	5 00	2 00	....	4.00	6 00	W. R. Fuller Co., Tampa,
		Official Analysis....	12 40	5 48	2 76	8 24	4 18	7 05	Fla.
Fruit and Vine No. 1..	356	Guarant'd Analysis.	8 00	6 00	1 00	.....	2 00	12 00	Baugh & Sons, Baltimore,
		Official Analysis....	8 70	7 13	2 51	9 64	2 97	12 38	Md.
H. G. Sulphate of Potash	357	Guarant'd Analysis.	....		.....	....	......	49 00	W. R. Fuller Co., Tampa,
		Official Analysis....	.....	....	....	....		49 08	Fla.
Fruit and Vine.........	358	Guarant'd Analysis.	8 00	6 00	1 00	.....	2 00	12 00	W. R. Fuller Co., Tampa,
		Official Analysis....	10 20	6 96	2 26	9 22	2 29	11 88	Fla.
Baugh's Vegetable Manure	359	Guarant'd Analysis.	12 00	6 00	4 00	....	5 00	7 00	Baugh & Sons, Baltimore,
		Official Analysis....	9 85	7 62	1 45	9 07	4 91	7 60	Md.
Dissolved Bone Black	360	Guarant'd Analysis.	....	17 00	....	.....	....	.....	Baugh & Sons, Baltimore,
		Official Analysis....	7 50	18 26	3 74	22 00	....	.....	Md.
H. G Vegetable Fish Guano	361	Guarant'd Analysis.	12 00	5 00	2 00	.....	4 00	8 00	Baugh & Sons, Baltimore,
		Official Analysis....	9 15	5 13	3 22	8 35	4 00	7 05	Md.
Acid Phosphate.........	362	Guarant'd Analysis.	.....	14 00	.....		....	......	Manatee Fert. Co., Palmetto, Fla.
		Official Analysis....	9 35	15 47	2 34	17 81	....	......	
Blood and Bone.........	363	Guarant'd Analysis.	......	6 00	8 00	......	6 50	.....	W. R. Fuller Co., Tampa,
		Official Analysis....	10 00	5 71	9 79	15 50	6 58	.....	Fla.
Blood Bone and Potash.	364	Guarant'd Analysis.	8 00	6 00	3 00	......	4 00	4 00	W. R. Fuller Co., Tampa,
		Official Analysis....	10 90	6 26	3 17	9 43	3 93	4 20	Fla.

Orange Tree Special.....	365	**Guarant'd Analysis.**	12 00	6 00	2 00	......	2 50	12 00	Manatee Fert. Co., Paltimore, Md.
		Official Analysis....	7 80	7 57	0 38	7 95	2 27	13 65	
Dark Cotton Seed Meal.	365	**Guarant'd Analysis.**	12 00	......	.....	......	5 00	......	Florida Mn'fg Co., Madison, Fla.
		Official Analysis ...	......	......	......	......	4 89	.....	
H. G. Sulphate of Potash	367	**Guarant'd Analysis.**	......	....	...	......	......	49 00	Manatee Fert. Co., Palmetto, Fla.
		Official Analysis....	......	......	......	......	......	49 72	
L. G. Sulphate of Potash	368	**Guarant'd Analysis.**	.....	......	.....	......	......	27 00	Manatee Fert. Co., Palmetto, Fla
		Official Analysis....	.....	....		......	......	25 86	
Cotton Seed Meal.......	369	**Guarant'd Analysis.**	......	......	......	......	8 00	......	H. E. Bridges, Memphis, Tenn,
		Official Analysis....	......	......	......	....	8 25	......	
Cotton Seed Meal.......	370	**Guarant'd Analysis.**	7 05	......	......	2 40	8 00	1 76	Abbeville Cotton Oil Co., Abbeville, Fla,
		Official Analysis....	......	......	......	......	8 51	......	
H. G. Sulphate of Potash	371	**Guarant'd Analysis.**	8 00	....	... ..	......	......	49 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	......	......	......		......	48 52	
Simon Pure Pine Apple.	372	**Guarant'd Analysis.**	8 00	4 00	1 00	.....	4 00	6 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	7 90	5 75	1 89	7 55	3 80	7 01	
Simon Pure Tomato.....	373	**Guarant'd Analysis.**	12 00	4 00	2 00	......	5 00	9 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	8 85	5 28	1 48	6 76	6 50	10 48	
H. G, Blood, Bone and Potash................	374	**Guarant'd Analysis.**	.....	......	.....	...	7 00	10 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	6 10	2 21	1 61	3 83	7 91	10 11	

Gem Bean Fertilizer.....	375	**Guarant'd Analysis.**	......	6.50	......	......	5.00	2.00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	8.00	5 00	2.91	7.91	5 10	3 26	
Special Mixture No, 1...	376	**Guarant'd Analysis.**	8 00	6 00	1 00	......	5 00	5 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	9 50	5 95	0 96	6 91	5 23	5 95	
Ideal Fertilizer........	377	**Guarant'd Analysis.**	8 00	5 00	1 00		4 00	6 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	9 20	6 15	0 95	7 11	3 63	8 26	
Mape's Fruit and Vine Manure	378	**Guarant'd Analysis.**	10 00	5 00	2 00	......	2 00	10 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	15 95	5 44	2 57	8 01	2 50	11 05	
Mape's Vegetahle Manure	379	**Guarant'd Analysis.**	12 00	6 00	2 00	....	5 00	4 00	Mape's Formula & P. G. Co., New York.
		Official Analysis....	15 25	6 40	2 49	8 89	4 86	5 95	
Mape's Orange Tree Manure	380	**Guarant'd Analysis.**	12 00	6 00	2 00	.....	4 00	3 00	Mape's Formula & P. G. Co,, New York.
		Official Analysis....	15 95	6 93	3 40	10 33	4 17	4 09	
Bradley's Fruit and Vine Fertilizer	381	**Guarant'd Analysis.**	13 00	5 50	1 00	......	2 25	10 00	American Ag'l & Chem. Co., New York.
		Official Analysis....	7 95	6 71	2 44	9 15	2 58	10 15	
Baugh's Fruit and Vine Manure	382	**Guarant'd Analysis.**	12 00	5 00	2 00	.....	2 00	15 00	Baugh & Son, Baltimore, Md.
		Official Analysis....	6 75	7 23	3 16	10 39	2 12	14 38	
Bradley's Vegetahle Fertilizer.............	383	**Guarant'd Analysis.**	13 00	6 00	1 00	.....	4 00	5 00	American Ag'l & Chem. Co., New York
		Official Analysis....	10 60	7 77	2 50	10 27	4 00	5 19	
Bradley's Nursery Stock	384	**Guarant'd Analysis.**	13 00	8 00	1 00	.....	4 50	3 00	American Ag'l & Chem. Co., New York.
		Official Analysis....	12 50	8 66	2 95	11 61	4 22	2 92	

Fruit and Vine...... ..	385	**Guarant'd Analysis.**	8 00	6 00	1 00	......	2 50	10 00	Va.-Carolina Chem, Co., Savannah, Ga.
		Official Analysis....	7 60	6 22	0 33	6 55	2 68	8 73	
Special Fruit and Vine..	386	**Guarant'd Analysis.**	10 00	6 00	1 00	......	4 00	13 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	5 10	6 59	0 36	6 95	4 70	13 70	
Cotton Seed Meal.......	387	**Guarant'd Analysis.**	...	......	.	2 50	7 50	1 50	W. A. Brode & Co., Memphis, Tenn.
		Official Analysis...	....	......	......	3 13	8 15	1 83	
Cotton Seed Meal.......	388	**Guarant'd Analysis.**	......	.....	......	2 00	7 50	1 00	A. A. Smith, Atlanta, Ga.
		Official Analysis....	......	.....	....	3 08	7 58	1 92	
Simon Pure No. 1.......	389	**Guarant'd Analysis.**	8 00	6 00	1 00		4 00	11 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	8 45	6 84	0 54	7 38	4 36	11 80	
Simon Pure Special.....	390	**Guarant'd Analysis**	12 00	3 00	1 00	.....	4 00	4 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	7 50	6 00	1 96	7 69	4 73	4 68	
Simon Pure No. 2.......	391	**Guarant'd Analysis.**	....	6 00	2 00	......	5 00	9 00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	6 55	7 89	0 91	8 80	5 64	6 70	
Upland Cotton Seed Meal.................	392	**Guarant'd Analysis.**	......	......	......	......	6 00	......	Valdosta Guano Co., Valdosta, Ga.
		Official Analysis....	......	......	.....	.....	4 21	......	
Bright Cotton Seed Meal	393	**Guarant'd Analysis.**	......	......	......	......	8 00	......	H. E Bridges, Memphis, Tenn.
		Official Analysis....	......	......	......	......	8 72	......	
Ground Castor Pomace	394	**Guarant'd Analysis.**	10 00	......	......	1 50	6 00	1 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis....	......	......	......	......	5 88	.....	

Armour's Dried Blood..	395	Guarant'd Analysis.	12 00	......	......	......	16 00	......	Armour's Fert. Works, Jacksonville.
		Official Analysis....	.....	.....	.....	......	17 63	......	
Armour's Nitrate of Soda................	396	Guarant'd Analysis.	......	......	......	......	17 00	......	Armour's Fert. Works, Jacksonville.
		Official Analysis....	......	......	.....	....	18 04	......	
Armour's H. G. Sulphate of Potash............	397	Guarant'd Analysis.	5 00	......	.....	......	50 00	......	Armour's Fert. Works, Jacksonville.
		Official Analysis....	.....	.....	.....	......	48 09	......	
Armour's Double Manure Salt.............	398	Guarant'd Analysis.	5 00	......	......	....	24 00	......	Armour's Fert. Works, Jacksonville.
		Official Analysis....	......	......	......	......	27 14	......	
Armour's Acid Phosphate................	399	Guarant'd Analysis.	......	16 00	......	....—	......	......	Armour's Fert. Works, Jacksonville.
		Official Analysis....	13 95	17 83	1 37	19 20	...	......	
Armour's Acid Phosphate................	400	Guarant'd Analysis.	......	14 00	......	......	.	......	Armour's Fert. Works, Jacksonville.
		Official Analysis....	13 90	17 34	1 34	18 68	......	......	
Armour's White Cloud Cotton................	401	Guarant'd Analysis.	10 00	8 00	1 00	....	2 00	2 60	Armour's Fert. Works, Jacksonville.
		Official Analysis....	9 20	10 13	1 85	11 98	2 17	2 66	
Armour's Water Melon Special................	402	Guarant'd Analysis.	10 00	5 00	0 25	......	3 00	8 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	6 35	7 42	1 48	8 90	2 51	8 89	
Armour's Fruit and Root Crop Special..........	403	Guarant'd Analysis.	10 00	8 00	1 00	......	2 00	5 00	Armour's Fert. Works, Jacksonville
		Official Analysis....	10 00	8 32	1 68	10 00	2 50	5 14	
Armour's Blood, Bone and Potash..........	404	Guarant'd Analysis.	10 00	8 00	1 00	......	5 00	7 00	Armour's Fert. Works, Jacksonville.
		Official Analysis....	7 35	8 21	2 12	10 33	5 21	7 92	
Ideal Fruit and Vine....	405	Guarant'd Analysis.	10 00	6 00	...	......	3 00	10 00	Willson & Toomer Fert. Co., Jacksonville.
		Official Analysis....	10 20	8 35	0 61	8 89	2 79	10 41	

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NUMBER 3

FLORIDA MONTHLY BULLETIN.

DEPARTMENT OF AGRICULTURE.

AUGUST 1, 1905.

B. E. McLIN,
COMMISSIONER OF AGRICULTURE.
TALLAHASSEE, FLORIDA.

Part 1—Crops. Part 2—Weather Report.
Part 3—Fertilizers and Feeding Stuff.

Entered January 31, 1003, at Tallahassee, Florida as second-class matter, under Act of Congress of June, 1900.

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TALLAHASSEE, FLA.
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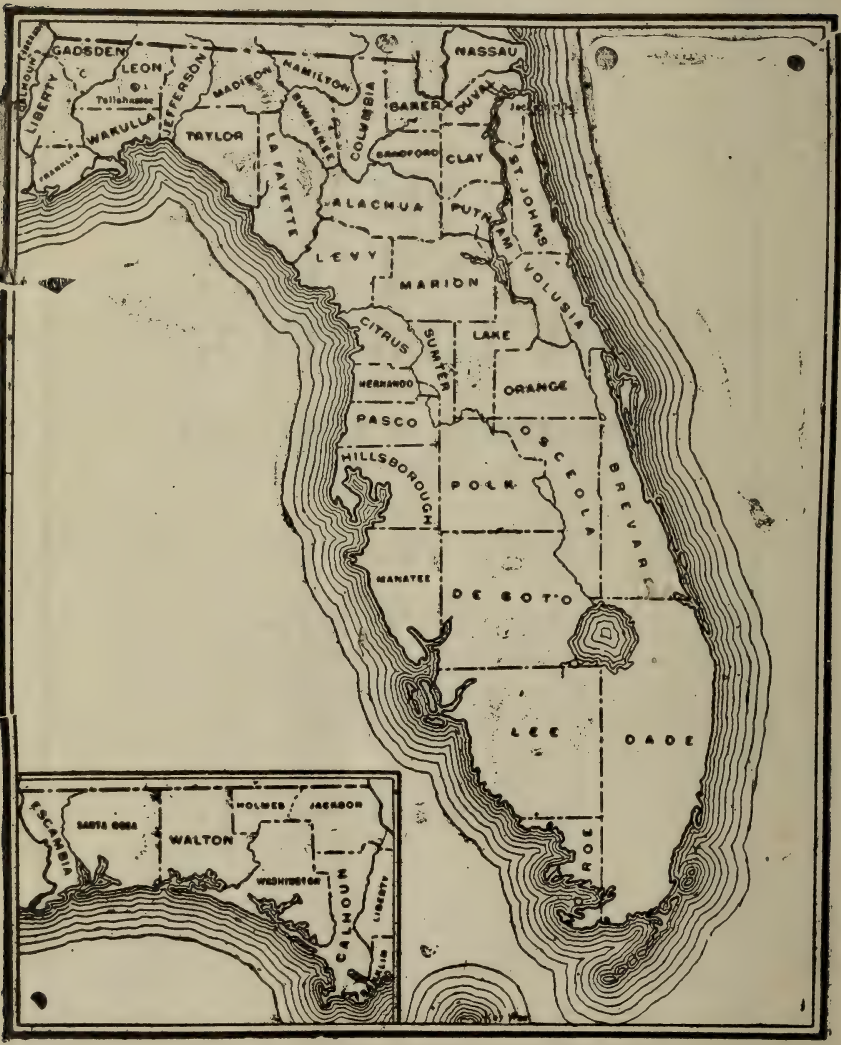
County Map of the State of Florida.



PART I.

CROPS.

DEPARTMENT OF AGRICULTURE.

B. E. McLin, Com H. S. Elliot, Chief Clerk.

CORRESPONDENTS' NOTES.

Alachua County.—Crops are doing very well at present, but should rain continue the effect on cotton will be bad. Corn, cane and other field crops are doing well. Fruit trees are growing nicely and all live stock is in good condition.

Baker County.—The condition of cotton is very poor at this time; in some parts of the county there is too much rain, in other parts no rain at all, and very little since the middle of May. Sugar cane is holding out very well. Sweet potatoes will hardly make more than half a crop; other crops are about the same. Live stock is generally in good condition, but there is some sickness among hogs.

Bradford County.—All crops are in a general good condition, and if no unfavorable change in seasons take place, the yield of all of them will be good. Live stock is in good condition, and pastures are fine.

Brevard County.—The few field crops grown in this county are in a fine condition; the seasons have been favorable, and the fruit trees are growing finely, though the crop will not be as good as last year. Live stock in good condition and ranges fine.

Calhoun County.—Crops are all good except cotton, which is suffering from too much rain. Live stock is in good condition; fruit trees doing well. The honey crop this year has been fine, good season, make many flowers.

Clay County.—All crops in fine condition and if seasons continue good farmers will have a full yield. Fruit trees in fine condition, also live stock of all kinds.

Columbia County.—Farm crops generally doing well, but seasons not favorable as they should be and some crops are failing. Live stock is in fine condition and the pastures are fine.

DADE COUNTY.—Only a few crops grown in this county except vegetable crops, but those that are are doing well. Fruit trees and plants of all kinds are growing finely. Live stock also in fine condition.

DESOTO COUNTY.—As a whole the field crops are promising an average yield. The orange and grape fruit crops will be considerably below last year's crops. The old seedling grape fruit trees which produced large crops are having a resting spell, and then the cold of last winter did some little damage to the tender wood.

ESCAMBIA COUNTY.—All crops are doing well except cotton, and it is shedding and rusting fast; the crop will be short. Corn crop is "par excellent;" little tobacco is raised, and that will be only about half a crop. Wool will fall about one-fourth short of the average clip. Live stock in good condition.

GADSDEN COUNTY.—The tobacco crop is the finest and largest ever grown in this section. About five and a half million pounds is the extent of the crop. A little of it is grown in Liberty County, and a small quantity is from Decatur County, Georgia, but all of it is brought here and cased and packed. Other crops are also good except cotton, which is poor. Live stock is doing fine.

HAMILTON COUNTY.—The crops of this county are in fair condition; cotton is not doing so well as some other crops. Live stock is generally in fine condition. Seasons have not been as favorable as desired.

HERNANDO COUNTY.—The crops of our county are as a rule very fine, the seasons have been favorable and all are doing well. The pastures are fine and all live stock is in good condition. Fruit trees doing well, but crop will be small.

HILLSBOROUGH COUNTY.—Crops are all doing well, and if the seasons continue favorable, good yields will be the result. Fruit trees are doing well, but crop will be smaller than last year. Live stock in fine condition.

JACKSON COUNTY.—Crops are growing well, and seasons up to this time favorable, unless it is a little too wet for cotton. All other crops will be fine. Live stock of all kins in an unusually fine condition.

JEFFERSON COUNTY.—The crops of this county will average up well, cotton not quite as good as some other crops, owing to unfavorable weather. All live stock is in fine condition, pastures good.

Lee County.—Field and fruit crops are doing well, seasons have been very favorable; will be a good fruit crop this year; citrus trees growing fine. Live stock all through the county is in splendid order.

Leon County.—Crops of all kinds except cotton doing very well. Cotton is losing fast from catterpillars, rust and shedding fruit; the heavy and continuous rains are doing much damage to cotton all over this section.

Levy County.—Nearly all crops are good and will yield a large return; cotton is being much damaged by heavy and continuous rain, causing it to rust, shed and a good deal to rot in the bolls. The rains have made the pastures fine an dlive stock generally is in fine condition.

Madison County.—Crops, except cotton, are growing well, and will yield fine; cotton is not doing well, both Sea Island and Upland cotton, have an unusually fine stalk, and now and then you see a field or patch well fruited, but generally the bottom crop is very deficient, and the middle crop is only tolerable. The top crop bids fair to be fine, but this is not to be depended on. Live stock is generally in excellent condition.

Marion County.—Crops are growing fast and promise good harvest; the seasons have been very favorable to this time, but if the rains continue cotton will be badly injured. Live stock is generally in fine condition, but there is some disease that is affecting the horses in some parts of the county. Fruit trees are doing well, and crops are likely to be short.

Osceola County.—Crops are doing fairly well, though we are having too much rain, which is injuring the corn, making it rot. Fruit trees are growing nicely, but the crops will be short, owing to cold last winter. Live stock is doing well.

Pasco County.—All crops are doing well, seasons are favorable. Live stock is in much better condition than usual, on account of the fine pastures. Fruit trees doing well, but crop will be light.

Polk County.—The average condition of crops all through the county is fine; the yields of most crops will be large. Live stock is doing well and in extra fine condition. Fruit promises a good crop, the trees are in good shape, and growing nicely.

St. Johns County.—All the crops of this county are in excellent growing condition, and if these conditions continue there will be an abundant yield of all crops. Orange and grape fruit trees are in fine condition and promise a good crop. Live stock of all sorts is in unusually good condition.

Santa Rosa County.—Crops of all kinds are looking well, except cotton, which is being affected by the rains, a continuance of which for much longer will do much damage. Live stock is in better condition than for a number of years, owing to the fine pastures, produced by the rains.

Sumter County.—The standard field crops are in fine condition and indicate a full yield, vegetable crops are over. The fruit trees are doing well, but the crops will be short owing to last springs cold. All live stock is in fine condition.

Wakulla County.—Cotton is being damaged by too much rain, which prevents it fruiting well, and also causes rust. Other field crops are doing well. Live stock is thriving on the fine pastures made by the rains.

Walton County.—Cotton is being injured considerably by the continued rains, but other field crops are doing well, and the pasture grasses on the ranges were never more luxuriant, in consequence of which the great majority of the live stock is in first class condition. Crop prospects are fine, except for cotton.

REPORT OF PERCENTAGE OF CONDITION AND PROSPECTIVE YIELD OF CROPS FOR JULY, 1905, AS COMPARED WITH AN AVERAGE.

COUTTIES	Upland Cotton		Sea Island Cotton		Corn		Sugar Cane		Rice		Field Peas	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yie'd	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua ...	....	....	90	80	85	95	70	90	....	....	90	95
Baker	...	....	50	53	75	75	100	100	....	....	....	....
Bradford ..	....	....	90	90	90	90	95	95	......	....	100	100
Brevard....	....	....	....	....	100	100	100	100	....	...	125	100
Calhoun....	90	70	85	60	120	100	90	90	..	....	90	90
Clay........	....	....	100	80	90	90	100	100	100	100	100	100
Columbia..	....	....	100	90	100	85	90	90	100	85	100	100
Dade.	....	....	...	....	......	...	....	....	...	....	100	100
DeSoto.....	....	....	....	....	95	90	90	95	100	100	100	110
Escambia..	75	75	....	....	100	100	100	100	100	100	75	100
Franklin...	....	....	..	......	80	90	80	95	80	90	80	85
Gadsden...	60	50	85	75	100	100	60	60	100	100	100	100
Hamilton...	....	......	60	75	60	60	60	75	60	75	75	75
Hernando .	....	....	...	......	100	125	100	70	......	....	100	80
Hillsboro'h	......	....	...	....	100	100	100	50	....	....	60	60
Jackson....	95	95	98	98	100	100	100	110	....	....	110	120
Jefferson...	96	90	85	85	100	100	100	100	....	..	100	90
LaFayette..	......	....	75	75	85	85	75	75	90	90	90	95
Lee	....	......	..	....	109	100	100	100	100	100	109	100
Leon.......	72	70	....	..	190	100	100	125	....	....	100	90
Levy........	....	...	100	90	100	100	75	75	100	100	100	100
Liberty	80	75	...	....	95	95	100	100	......	..	75	75
Madison...	75	75	80	80	65	65	110	110	100	100	105	100
Marion. ..	..	....	100	100	100	100	80	80	100	100	80	80
Nassau	...	....	....	....	100	100	100	100	....	....	100	100
Orange	....	....	......	....	100	110	100	100	....	....	90	90
Osceola....	....	....	....	....	100	100	100	100	100	110	100	100
Pasco.......	....	....	....	......	98	100	90	95	50	45	80	75
Polk	....	....	....	....	100	120	90	100	...	....	100	120
Putnam ...	....	....	....	....	100	100	100	109	....	....	100	100
St. Johns..	....	....	....	....	100	110	110	110	....	....	100	100
Santa Rosa	85	85	....	..	100	100	100	100	....	....	90	90
Sumter.....	....	...	95	100	100	100	85	90	....	....	90	90
Suwannee..	...	....	80	75	90	90	100	100	85	90	85	90
Wakulla...	70	75	90	90	100	100	90	90	......	......	75	75
Walton ...	85	85	...	..	90	90	95	95	....	....	..	....
Washingt'n	80	80	85	80	90	85	85	90	....	....	80	90
Gen'l av'ge per cent	80	77	86	88	91	96	92	92	91	93	93	93

CONDITION OF CROPS—Continued.

COUNTIES	Velvet Beans		Alfalfa		Sweet Potato's		Peanuts		Cassava		Hay	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yie'd	Condition	Prospective Yie d	Condition	Prospective Yield	Condition	Prospective Yie'd
Alachua. . .	90	100	....	....	70	75	70	80	....	....	90	100
Baker.. . . .	....	.....	....	...	50	50	90	90	.....	....	..	...
Bradford . .	100	100	....	..	100	125	100	100	....	....	100	100
Brevard. . . .	....	...	....	....	75	75	....	....	....	...	....	....
Calhoun.. . .	....	....	....	..	100	100	100	100	....	....	100	100
Clay.	100	100	....	....	100	100	90	100	....	...	100	100
Columbia . .	100	100	....	....	75	70	100	95	....	....	100	95
Dade.	100	100	....	....	100	100	....	....	....	....	....	..
DeSoto.......	95	100	....	....	95	110	90	80	90	90	100	110
Esscambia..	100	100	75	100	100	100	100	100	75	100	100	75
Franklin . . .	..	...	....	....	90	100	90	100	90	100	90	100
Gadsden . . .	100	100	....	....	125	125	110	110	....	....	100	100
Hamilton . .	75	75	....	....	•60	75	75	75	..	....	75	75
Hernando . .	100	60	...	....	100	125	100	95	....	...	...	....
Hillsboro 'h	60	60	....	....	100	100	70	60	100	60	100	60
Jackson. . . .	....	....	....	....	105	120	120	125	.....	...	125	150
Jefferson .	100	100	..	...	100	100	98	90	....	....	100	100
LaFayette. .	90	95	..	....	75	90	75	75	......	....	....	....
Lee.	100	100	......	....	95	100	90	100	....	....	...	....
Leon.	100	100	....	....	85	80	90	80	......	....	100	100
Levy.	100	100	...	....	30	30	90	90	95	95	100	100
Liberty.	90	90	....	....	95	95	95	95	......	....	75	72
Madison . . .	100	60	..	...	95	95	105	100	...	....	110	110
Marion	100	100	....	....	90	90	80	80	...	....	100	100
Nassau.	100	100	....	..	125	125	..	....	....	....	100	100
Orange	100	100	....	....	100	110	....	....	90	90	109	110
Osceola. . . .	110	120	...	...	90	100	....	....	90	90	110	120
Pasco........	75	150	50	25	60	75	40	50	90	85	95	90
Polk.	110	120	100	100	100	100	100	110	100	100	100	100
Putnam.	100	109	...	......	100	100	100	100	......	....	....	....
St. Johns . .	....	..	....	...	110	110	....	...	....	....	100	100
Santa Rosa	100	100	..	...	90	90	100	100	....	....	...	....
Sumter	85	85	....	....	95	75	96	100	....	......	100	100
Suwannee. .	100	100	....	....	85	90	100	100	....	....	100	100
Warulla. . .	100	100	...	....	100	100	100	109	....	...	80	90
Walton	100	100	....	....	100	100	....	....	....	....	110	110
Washingt'n	100	95	....	....	100	100	90	100	....	....	110	110
Gen'l av'ge per cent	96	95	75	75	91	96	92	93	102	87	99	99

CONDITION OF CROPS—Continued.

COUNTIES	Egg Plants		Tobacco		Bananas		Pine-app'es		Guavas	
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield
Alachua	70	75	....	....	....	......	....	......	....	......
Baker	....	......	....	......	....	......	....	......	....	......
Bradford	....	......	....	......	....	......	....	......	....	......
Brevard	....	......	....	......	....	......	75	75	....	......
Calhoun	....	......	....	......	....	......	....	......	....	......
Clay	....	......	....	......	....	......	....	......	....	......
Columbia	....	......	....	......	....	......	....	......	....	......
Dade	....	......	....	......	50	50	50	30	100	100
DeSoto	90	80	80	70	90	90	90	80	90	40
Escambia	80	75	75	80	....	......	....	......	....	......
Franklin	....	...	....	......	....	......	....	......	....	......
Gadsden	....	......	140	140	....	......	....	....	....	......
Hamilton	....	......	50	50	....	....	....	......	....	......
Hernando	....	......	....	......	....	......	....	......	....	......
Hillsboro'h	60	40	....	......	60	60	80	60	....	......
Jackson	....	......	....	......	....	......	....	......	....	......
Jefferson	....	......	....	......	....	......	....	......	....	......
LaFayette	....	......	....	......	....	......	....	......	....	......
Lee	....	......	....	......	....	......	100	100	100	100
Leon	....	......	100	125	....	......	....	..	....	......
Levy	....	....	....	......	....	......	....	......	....	......
Liberty	....	......	....	......	....	....	....	......	....	......
Madison	....	......	....	......	....	......	....	......	....	......
Marion	....	......	....	......	....	......	....	....	....	......
Nassau	....	......	....	......	....	......	....	......	....	......
Orange	100	100	....	....	....	......	100	50	....	.....
Osceola	100	100	....	......	....	......	100	40	80	20
Pasco	60	60	75	85	....	......	10	50	....	......
Polk	....	......	....	......	80	75	....	......	....	......
Putnam	....	......	....	......	....	......	....	......	....	.....
St. Johns	....	......	....	......	....	......	....	......	....	.....
Santa Rosa	....	......	....	......	....	......	....	......	....	......
Sumter	90	85	....	......	....	......	....	......	....	......
Suwannee	....	......	....	......	....	......	....	......	....	......
Wakulla	....	......	....	.....	....	......	....	......	....	......
Walton	....	......	....	......	....	......	....	......	....	......
Washingt'n	....	......	....	......	....	......	....	......	...	......
Gen'l av'ge per cent.	81	77	87	92	70	69	76	61	92	65

CONDITION OF CROPS—Continued.

COUNTIES	Orange Trees		Lemon Trees		Lime Trees		Grape Fruit Trees		Horses and Mules
	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition	Prospective Yield	Condition
Alachua	70	75	70	75			75	90	90
Baker									100
Bradford									90
Brevard	80	50					80	60	80
Calhoun	100	100							95
Clay	100	111							100
Columbia									100
Dade	100	105			100	100	100	100	100
DeSoto	100	90	90	50	90	60	100	50	95
Escambia									80
Franklin									90
Gadsden									100
Hamilton									75
Hernando	80	10					60		100
Hillsboro'h	100	60	100	50			100	60	100
Jackson									120
Jefferson									95
LaFayette	80	50							75
Lee	100	85	90	80	90	80	100	85	100
Leon									100
Levy									100
Liberty									90
Madison									110
Marion									75
Nassau	20								100
Orange	100	85					100	85	100
Osceola	100	90			100	100	100	90	100
Pasco	75	25					75	25	95
Polk	110	90			75	50	110	90	100
Putnam	60	75					50	25	100
St Johns	100	110					100	110	100
Santa Rosa									100
Sumter	85	50	75	50			75	50	100
Suwannee									100
Wakulla									90
Walton									95
Washingt'n									100
Gen'l av'ge per cent	87	71	85	46	91	78	87	71	96

CONDITION OF CROPS—Continued.

COUNTIES	Cattle	Hogs	Sheep	Tobacco	Honey	Wool
	Condition	Condition	Condition	Yield in Pounds	Yield in Pounds	Yield in Pounds
Alachua	85	80	85	....	....	....
Baker	100	85	100	....	....	10,000
Bradford	100	95	......	....	....	....
Brevard	90	90	......	....	5,000	....
Calhoun	95	75	......	....	157,000	13,845
Clay	110	......	100	....	....	....
Columbia	105	95	90	....	2,000	500
Dade	100	......	......	....	....	....
DeSoto	9	95	90	1,000	20,000	3,000
Escambia	100	75	80	2,000	20,000	15.000
Franklin	90	90	90	....	175	1,000
Gadsden	100	110	90	5,500,00	6,500	2,000
Hamilton	90	75	75	....	....	....
Hernando	100	100	100	....	....	2,500
Hillsborough	100	100	90	....	....	....
Jackson	150	100	100	....	....	4,000
Jefferson	100	100	......	....	....	....
LaFayette	85	90	......	....	5,000	....
Lee	100	......	......	....	1,000	....
Leon	100	100	100	150,000	2,000	1,009
Levy	100	75	......	....	....	....
Liberty	95	90	95	....	48,000	8,000
Madison	100	75	100	....	....	....
Marion	100	100	80	....	....	5,000
Nassau	100	90	......	....	....	....
Orange	100	100	100	....	2,500	2.000
Osceola	110	100	110	....	5,000	20,000
Pasco	98	60	75	18,500	450	3,900
Polk	100	90	85	....	....	....
Putnam	100	85	......	....	....	....
St. Johns	110	110	110	....	20i000	2,000
Santa Rosa	100	50	100	....	3 000	30,000
Sumter	100	90	85	1,000	2 000	3,000
Suwannee	100	80	74	....	....	....
Wakulla	90	100	75	....	10.000	300
Walton	100	100	110	....	10,000	....
Washington	100	85	95	....	....	25,000
General av'ge per cent.	100	90	91	5.672.000	320,000	152.045

PART II.

WEATHER REPORT.

U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

Central Office: Washington, D. C.

FLORIDA SECTION:
A. J. MITCHELL, Section Director.,
JACKSONVILLE, FLA.

REPORT FOR JUNE, 1905.

SALIENT CLIMATIC FEATURES.

ATMOSPHERIC PRESSURE.

	Inches.
Mean, as determined from records of 4 stations	29.96
Departure from the normal, 4 records	-0.08
Highest observed, at Jacksonville on the 24th	30.16
Lowest observed, at Jacksonville on the 8th	29.76
Absolute range for the State	0.40

TEMPERATURE.

	Degrees.
Mean, as determined from records of 59 stations	80.2
Departure from the normal, 32 records	+0.4
Highest monthly mean, at Key West	82.4
Lowest monthly mean, at Fort George	76.6
Highest recorded, at Orange City on the 8th	101
Loewst recorded, at Middleburg on the 6th	48
Absolute range for the State	53

PRECIPITATION.

	Inches.
Average, as determined from records of 58 stations	4.96
Departure from the normal, 31 records	--2.18
Greatest amount for any 24 hours at Fort Meade on the 19th	4.75
Greatest monthly amount ,at Orange Home	14.86
Least monthly amount, at Pensacola	0.93
Average number of days on which 0.01 or more fell	9

WIND.

Prevailing wind direction.——Northeast and southeast.

WEATHER.

Average number of clear days	12
Average number of partly cloudy days	14
Average number of cloudy days	4

COMPARATIVE DATA FOR STATE, JUNE.

Year	Temperature					Precipitation
	Monthly Average	Highest	Date	Lowest	Date	Monthly Average
1892..........	78.8	100	11*	62	14	9.00
1893.	89.2	104	23	60	9*	8.02
1894..........	78.2	101	30	56	14*	6.39
1895..........	79.8	99	22*	57	20	4.46
1896..........	79.8	100	1*	54	3	10.78
1897..........	82.0	102	19	58	4*	4.96
1898..........	80.9	101	16*	51	8*	3.08
1899..........	80.4	104	16	53	18	5.43
1900..........	79.4	100	28	58	2	5.97
1901..........	79.4	103	27	50	2	9.77
1902..........	80.7	103	30	53	3	5.95
1903..........	78.6	99	30*	54	13	6.69
1904..........	79.2	102	19	52	13	6.19
1905..........	80.2	101	8	48	6	4.96

*Also all other dates.

PRESSURE AND WIND TABLE.

STATIONS	Atmospheric Pressure					Wind Velocity in Miles				Relative Humidity		
	Mean Reduced Barometer	Highest	Date	Lowest	Date	Total for Month	Maximum Velocity	Direction	Date	Highest	Lowest	Mean
Jacksonville..	29.98	30 16	24	29 76	8	5.829	80	n	25	106	51	74
Key West.....	20 96	30.13	24	29.8	8	6.088	26	se	23	93	60	78
Jupiter	29.95	30 08	24	29.83	13	5.420	25	e	24	89	56	71
Pensacola.....	29 9	30.14	24	29 87	18	6 562	34	sw	16	[illegible]	53	73
Tampa........	29 96	30.14	24	20 81	1	4.837	33	nw	20	100	36	74

*8 a. m. reading only

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Farh							Precipitation, in inches				Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal	Highest.	Date	Lowest.	Date	Greatest daily range	Total.	Departure from the normal	Greatest in 24 hours	Number of Rainy Days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	
Northern Section.																		
Archer	Alachua	92	23	81.4	+1.6	98	8*	60	6*	33	9.69	+2.55	2.75	15	6	22	2	se.
Federal Point	Putnam	10	13	79.6	+1.1	98	8	58	6*	34	3 22	—3 44	0.85	12	11	17	2	ne.
Fernandina	Nassau	15	4	80.2	+1.4	97	8	65	6	22	2.32	—2.46	0.85	7	15	15	0	ne -se
Fort George	Duval	15	20	76.6	—2.8	92	26	68	6*	....	......	......	.....	....	...	...	...	se.
Gainesville	Alachua	175	19	80.4	+0.2	98	17	61	7*	28	8 62	+1.79	2.76	14	21	1	8	ne.
Huntington	Putnam	50	9	80.6	+0 4	99	9	60	6*	30	4.67	--4 16	1.85	8	20	7	3	e.
Jacksonville	Duval	43	34	78.6	—0.5	95	26	66	25	38	2.72	--2.73	1.42	7	10	15	5	e.
Jasper	Hamilton	165	7	80.0	+1.3	66	8	60	7*	36	2.86	......	0.80	9	16	10	4	sw.
Johnstown	Bradford	125	10	80.2	+0 2	95	27	55	6	37	3.30	—3.48	2.38	4	...	...	...	......
Lake City	Columbia	201	15	79.9	—0.4	97	9	58	6	34	5.34	—1.10	1.79	9	6	18	6	sw.
Macclenny	Baker	140	10	80.3	0 0	100	12	52	6	40	4.36	--3.65	2.00	4	8	0	22	w.
Middleburg	Clay	20	9	78 6	+0.4	99	26	48	6	44	3.59	....	0.93	9	8	7	15	nw.
Pinemount	Suwannee	103	3	79.6	+0.6	100	9	50	8	48	3.86	....	..	....	...	...	...	ne.
St Augustine	St. Johns	10	55	79.8	—1.5	96	8*	60	8	36	1.42	—3.46	0.70	3	8	17	5	se.
Sumner	Levy	23	15	78.6	0.8	93	7*	53	6	38	5.87	—0.33	1.34	9	10	19	1	sw.
Switzerland	St. Johns	...	9	b78.7	0.0	96	26	b58	6	32	2.02	—4.13	0.65	9	...	...	...	......

CLIMATOLOGICAL DATA FOR JUNE, 1905—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahr.							Precipitation, in inches				Sky.			Prevailing direction of wind.
				Mean.	Departure from the Normal	Highest.	Date.	Lowest.	Date	Greatest daily range	Total.	Departure from the normal	Greatest in 24 hours	Number of Rainy Days.	Number clear days.	Number partly cloudy days.	Number cloudy days	
Central Section.																		
Bartow.	Polk	17	10	81.2	0.0	97	16*	59	12	33	2.59	—5.48	0.93	8	12	18	0	e.
Brooksville	Hernando	328	13	80 2	+0.2	98	14*	d60	12	d33	9.83	+0.87	2.10	11	...	..	...	ne.
Clermont	Lake	110	13	81.4	—0.3	97	8	63	12	34	5.86	—0.31	2.34	8	10	20	0	e.
De Land	Volusia	32	5	.....	.....	92	...	...	..	....	......	....	....	....	...	...	...	......
Eustis	Lake	180	16	80.6	—0.1	98	8	58	12	35	4.49	—1.88	1.03	10	10	20	9	w.
Fort Mead	Polk	125	22	81.6	+2.7	99	2*	59	13	36	9.99	+0 73	4.75	9	24	6	0	e.
Fort Pierce	Brevard	25	14	79.5	+0.6	95	27	62	12	26	2.62	—7.66	0.93	7	18	2	10	se.
Grasmere	Orange	175	9	81.2	+0.3	96	8	62	12	29	......	....	.....	....	21	6	3	sw.
Inverness	Citrus	43	5	79 5	—0.1	95	8	61	11*	30	7.65	......	2.00	12	9	26	4	ne.
Kissimmee	Osceola	65	13	79.4	—0.9	97	19	59	12	30	4.46	—2.65	2.25	11	9	18	3	e.
Malabar	Brevard	...	4	80.8	+0 2	100	26	63	7*	29	2 51	....	1.28	8	22	8	0	e.
Merritt's Island	Brevard	20	24	80.5	+1.0	99	26*	69	7*	21	4.38	—2.58	1.32	9	13	15	2	ne.
New Smyrna	Volusia	20	17	78.8	—0.5	100	27	56	7	33	5.31	—0.79	3.00	6	20	8	2	se.
Ocala	Marion	150	18	80.5	+1.2	96	8*	59	11	34	6 19	—2.22	1.23	13	8	11	11	e.
Orange City	Volusia	50	15	81.3	+0.3	93	8	55	12	42	5.52	—1 61	1.25	10	18	11	1	w
Orange Home	Sumter	75	1	79.8	.....	97	18	60	11*	32	14.86	......	4.44	14	10	20	0	ne-se

CLIMATOLOGICAL DATA FOR JUNE, 1905—Continued.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.							Precipitation, in inches				Sky.			Prevailing direction of wind.
				Mean.	Departure from the normal	Highest.	Date	Lowest.	Date	Greatest daily range	Total.	Departure from the normal	Greatest in 24 hours	Number of rainy days	Number clear days.	Number partly cloudy days	Number cloudy days	
Orlando	Orange	98	14	80.0	0.0	97	27	59	12	34	8.03	+1.85	3.36	...	...	...	...	se.
Plant City	Hillsbor'gh	121	13	79.4	—0.9	95	8	59	12	33	8.38	-0.36	3.03	7	...	...	.	.....
Rockwell	Marion	...	6	81.0	—0.2	96	9*	60	6*	36	6.96	......	2.05	...	...	...	...	se.
St. Leo	Pasco	140	11	79.8	—1.8	95	27	60	12	30	6.97	—0.14	1.13	13	8	11	11	w.
Tampa	Hillsbor'gh	20	15	80.5	+0.5	94	23	64	6	26	8.88	—0.35	3.50	15	13	15	2	ne.
Tarpon Springs	Hillsbor'gh	20	21	80.2	+0.4	95	9*	64	6	36	5.72	—3.48	1.52	11	14	13	3	w.
Titusville	Brevard	11	14	80.2	+1.6	99	27	61	7*	31	4.67	—3.28	1.70	14	8	6	10	ne.
Southern Section.																		
Avon Park	De Soto	150	9	80.4	+0.7	96	26*	61	12	33	4.48	......	3.07	16	10	20	0	ne.
Caxambas	Lee	...	5	81.8	+0.1	96	24	69	12	20	4.49	-5.99	1.75	8	19	11	0	nw.
Flamimgo	Monroe	10	5	82.1	+1.6	94	9	66	7	22	1.23	......	1.00	5	18	10	2	sw.
Hypoluxo	Dade	11	9	79.7	+0.5	93	29	65	7*	23	2.72	—8.15	0.53	13	11	17	2	ne.
Jupiter	Dade	...	18	80.4	+1.4	94	29	69	12	19	2.08	—4.41	0.93	11	4	24	2	e.
Key West	Monroe	28	34	82.4	—0.1	90	27	74	8	13	2.40	—1.60	1.64	8	16	11	3	e.
Manatee	Manatee	22	4	80.2	0.0	94	3*	59	8	30	5.13	—3.11	1.41	10	12	17	1	sw-se.
Miami	Dade	9	9	80.6	—0.7	94	18*	66	7	22	7.61	—0.53	2.00	10	9	21	0	ne.
Myers	Lee	22	21	80.7	+0.9	94	15	65	8*	26	5.78	—4.96	1.55	7	20	10	0	e-sw.
Nocatee	De Soto	6	5	81.0	—0.5	95	1*	61	12	31	3.98	......	.	...	6	14	10	se.

CLIMATOLOGICAL DVTA FOR JUNE, 1905.

STATIONS	COUNTIES	Elevation, feet	Length of record years	Temperatnre, in degrees Fahr.							Precipitation, in inches				Sky			Prevailing direction of wind
				Mean	Departure from the Normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Number of rainy days	Number clear days	Number partly cloudy days	Number cloudy days	
Western Section.																		
Apalachicola	Franklin	...	1	....	.....	....	...	...	...	....	.....	......	.....	.....	....	...	...	......
Bonifay	Holmes	116	4	80.8	+1.6	97	8*	62	2	30	4.32	......	1.30	8	5	13	12	nw.
Carrabelle	Franklin	12	10	80.9	+0.4	98	8	62	2	26	1.98	+1.70	0.71	8	22	6	2	sw.
DeFuniak Springs	Waltou	193	9	79.9	+0.3	99	8	60	2*	35	4.04	—1.52	1.00	10	9	19	2	s
Madison	Madison	...	1	80.6	.....	97	13	62	5	24	4.36	......	1.50	10	16	14	0	se.
Marianna	Jackson	85	9	....	.....	...	...	60	2	...	4.95	.....	1.80	6	11	15	5	se.
Milton	Santa Rosa	...	..	....	.....	....	...	...	..	....	..	......	.....	.	...	...	...	......
Molino	Escambia	49	2	e78.4	—0.8	e98	8*	e56	2	e37	7.58	......	4.00	6	...	...	...	s.
Monticello	Jefferson	207	1	79.9	....	96	8*	59	6	31	3.76	......	1.17	11	13	17	0	sw.
Mount Pleasant	Gadsden		..	80.8	.....	98	8*	60	6	33	4.31	.....	1.82	10	17	12	1	s.
Pensacola	Escambia	56	20	80.8	+1.4	94	8	68	2	19	0.9[illegible]	—4.43	0.35	5	12	15	3	sw.
St. Andrew	Washington	12	8	80.8	+0.6	95	20*	60	2	32	2.29	—4.43	1.45	6	20	7	3	w.
Stephensville	Taylor	...	6	79.7	+1.3	90	2	54	6	30	4.75	...	1.42	9	6	24	0	sw.
Tallahassee	Leon	193	20	80.0	+1.2	94	13	64	5	24	3.50	—2.86	1.20	8	17	9	4	w.
Wausau †	Washington	250	8	.....	...	....	...	60	2	32	4.85	....	3.16	4	4	21	2	sw.
Wewahitchka	Calhoun	...	6	..	...	...	...	...	...	....	.....	....	.....	....	...	..	...	......
	State Means			80.2	+0.4	...		...	...	...	4.96	—2.18	.....	9	12	14	4	ne se.

All records are used in determining State means, but the mean departures from the normal temperature and precipitation are based only on records from stations that have ten or more years of observation.
a, b, c, etc., following name of station indicate number of days missing from report. *More than one day.
‡Weather bureau. †Thermometers are not self registering and readings are made at 7 a. m., 2 p. m. and 9 p. m. daily. ¶Data not used in averages.

PART III.

COMMERCIAL FERTILIZERS AND COMMERCIAL FEEDING STUFF.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. E. E. McLIN, Clerk.

STATE VALUES.

It is not intended by the "State valuation" to fix the price or commercial value of a given brand. The "State values" are the market prices for the various approved chemicals and materials used in mixing or manufacturing commercial fertilizers, at the date of issuing a bulletin, or the opening of the "season." They may, but seldom do, vary from the market prices, and are made liberal to meet any slight advance or decline.

They are compiled from price lists and commercial reports by reputable dealers and journals.

The question is frequently asked: "What is 'Smith's Fruit and Vine' worth per ton?" Such a question cannot be answered categorically. By analysis, the ammonia, available phosphoric acid, and potash may be determined, and the inquirer informed what the cost of the necessary material to compound a ton of goods similar to "Smith's Fruit and Vine" would be, using none but accepted and well known materials of the best quality.

State values do not consider "trade secrets," loss on bad bills, cost of advertisements, and expenses of collections. The "State value" is simply that price at which the various ingredients necessary to use in compounding a fertilizer can be purchased *for cash in ton lots at Florida sea ports.*

These price lists, in one, five and ten lots, are published in this report, with the "State values" for 1905 deducted therefrom.

The valuation for 1905 being the same as for 1904, excepting in case of ammonia, which has been advanced to 15½ cents per pound, or to $3.10 per unit of 20 pounds.

STATE VALUATIONS.

For Available and Insoluble Phosphoric Acid, Ammonia and Potash for the Season of 1905.

Available Phosphoric Acid	5 cents a pound
Insoluble Phosphoric Acid	1 cent a pound
Ammonia (or its equivalent in nitrogen)	15½ cents a pound
Potash (as actual potash, K2O)	5½ cents a pound

If calculated by units—

Available Phosphoric Acid	$1.00 per unit
Insoluble Phosphoric Acid	20 cents per unit
Ammonia (or its equivalent in nitrogen)	$3.10 per unit
Potash	$1.10 per unit

With a uniform allowance of $1.50 per ton for mixing and bagging.

A unit is twenty pounds, or 1 per cent in a ton. We find this to be the easiest and quickest method for calculating the value of fertilizer. To illustrate this take for example a fertilizer which analizes as follows:

Available Phosphoric Acid	6.22 per cent	x $1.00	6.22
Insoluble Phosphoric Acid	1.50 per cent.	x 20	.30
Ammonia	3.42 per cent.	x 3.10	10.60
Potash	7.23 per cent.	x 1.10	7.95
Mixing and bagging			1.50
Commercial value at sea ports			26.57

Or a fertilizer analyzing as follows:

Available phosphoric acid	8 per cent.	x $1 00	$ 8.00
Ammonia	2 per cent.	x 3.10	6.20
Potash	2 per cent.	x 1-10	2.20
Mixing and bagging			1.50
Commercial value at sea ports			$17.90

The above valuations are for cash for materials delivered at Florida seaports, and they can be bought in one ton lots at these prices at the date of issuing this Bulletin. Where fertilizers are bought at interior points, the additional freight to that point must be added.

If purchased in car load lots for cash, a reduction of ten per cent. can be made in above valuations, i, e.:

Available Phosphoric Acid	90 cents per unit
Potash (K2O)	99 cents per unit
Ammonia (or equivelent in nitrogen)	$2 79 per unit

The valuations and market prices in succeeding illustrations, are based on market prices for one ton lots.

MARKE PRICES OF CHEMICALS AND FERTILIZING MATERIALS AT FLORIDA SEA PORTS, JANUARY, 1905.

Ammoniates.	Less than 5 tons	5 to 10 tons.	10 tons & over.
Nitrate of Soda 17 per cent. Ammonia	$55.00	$54.50	$54.00
Sulphate of Ammonia 25 per cent. Ammonia	72.00	71.50	71.00
Dried Blood 16 per cent. Ammonia	55.00	54.50	54.00
POTASH.			
High Grade Sulphate Potash 48 per cent. Potash (K2O)	52.00	51.00	50.00
Low Grade Sulphate Potash 26 per cent. Potash (K2O)	32.00	31.00	30.00
Muriate of Potash 50 per cent. Potash (K2O)	46.00	45.00	44.00
Nitrate Potash, 13 Am., 42 Potash (K2O)	82.00	81.00	80.00
Kainit 12 per cent. Potash	14.00	13.50	13.00
Canada Hardwood Ashes 4 per cent. (K2O) Potash	17.00	16.50	16.00
AMMONIA AND PHOSPHORIC ACID.			
High Grade Blood and Bone, 10 cent. Phosphoric Acid	37.00	36.50	36.00
Low Grade Blood and Bone, 6½ per cent. Ammonia, 8 per cent. Phosphoric Acid	29.00	28.50	28.00
Owl Brand Tankage, 5½ per cent. Ammonia	20.00	19.50	19.00
Raw bone 4 per cent. Ammonia 22 per cent. Phosphoric Acid	31.00	30.50	30.00
Ground Castor Pomace 6 per cent. Ammonia, 2 per cent. Phosphoric Acid	23.00	22.50	22.00

Bright Cotton Seed Meal 8 per cent. Ammonia, market quotations	28.00	27.50	27.00
Dark Cotton Seed Meal, 6 per cent. Ammonia, market quotions	22.00	21.50	21.00

PHOSPHORIC ACID.

Double Super Phos., 45 per cent. Available Phosphoric Acid	46.00	45.50	45.00
High Grade Acid Phosphate, 16 per cent. Available Phosphoric Acid	17.00	16.50	16.50
Acid Phosphate 14 per cent. Available Phosphoric Acid	15.00	14.50	14.00
Boneblack 17 per cent. Available Phosphoric Acid	25.00	24.50	24.00
Odorless Phosphate	25.00	24.50	24.00

MISCELANEOUS.

H. G. Ground Tobacco Stems, 3 per cent. Ammonia, 9 per cent. Potash	25.00	24.50	24.00
Pulverized Ground Tobacco Stems	16.00	15.50	15.00
Tobacco Dust, No. 1 ,3 per cent. Ammonia, 2 K2O Potash	21.00	20.50	20.00
Tobacco Dust, No. 2, 1½ per cent. Ammonia, 1½ per cent. Potash	16.00	15.50	15.00
Dark Tobacco Stems, baled	16.00	15.50	15.00
Land plaster in sacks	10.50	10.25	10.00

The charges by reputable manufacturers for mixing and bagging, any special or regular formula, is $1.50 per ton in excess of above prices.

Composition of Fertilizer Materials.

NITROGENOUS MATERIALS

	Pounds per Hundred.		
	Ammonia	Phosphoric Acid	Potash
Nitrate of Soda..............	17 to 19	....	....
Sulphate of Ammonia........	21 to 24	....	....
Dried Blood........	12 to 17	....	....
Concentrated Tankage.......	12 to 15	1 to 2	....
Bone Tankage...............	6 to 9	10 to 15	....
Dried Fish Scrap....	8 to 11	6 to 8	....
Cotton Seed Meal............	7 to 10	2 to 3	1½ to 2
Hoof Meal....	13 to 17	1½ to 2	.. ..

PHOSPHATE MATERIALS.

	Pounds per Hundred.		
	Ammonia	Available Phosphoric Acid	Insoluble Phosphoric Acid
Florida Pebble Phosphte...	....	....	26 to 32
Florida Rock Phosphate.....	....	....	33 to 35
Florida Super Phosphate....	....	14 to 19	1 to 6
Grouned Bone...............	3 to 6	5 to 8	15 to 17
Steamed Bone................	2 to 4	6 to 9	10 to 20
Dissoved Bone.............	2 to 4	13 to 15	2 to 3

POTASH MATERIALS AND FARM MANURES

	Pounds per Hundred			
	Actual Potash	Am'nia	Phosphoric Acid	Lime
Muriate of Potash..........	50	....	....	.....
Sulphate of Potash..........	48 to 52	....	....	....
Double Sul. of Pot. & Mag.	26 to 30	....	....	....
Kainit......................	12 to 12½	....	....	....
Sylvinit.............	16 to 20	....	......	....
Cotton Seed Hull Ashes......	15 to 30	....	7 to 9	10
Wood Ashes, unleached....	2 to 8	....	1 to 2	30 to 25
Wood Ashes leached........	1 to 2	.. ....	1 to 1½	35 to 40
Tobacco Stems...............	5 to 8	2 to 4	.....	3½
Cow Manure (fresh)....	0.40	0 to 41	0.16	0.31
Horse Manure (fresh)	0.53	0 to 60	0.28	0.21
Sheep Manure (fresh)....... .	0.67	1.00	0.23	0.33
Hog Manure (fresh).	0.60	0.55	0.19	0.08
Hen Dung (fresh)...........	0.85	2.07	1.54	0.24
Mixed Stable Manure.. .	0.63	0.76	0.26	0.70

FACTORS FOR CONVERSION.

To convert—

Ammonia into nitrogen, multiply by	0.824
Ammonia into Protein by	5.15
Nitrogen into ammonia, multiply by	1.214
Nitrate of soda into nitrogen, multiply by	16.47
Nitrogen into Portein by	6.25
Bone Phosphate into phosphoric acid,multiplied by	0.458
Phosphoric Acid into Bone Phosphate,multiply by	2.184
Murate of Potash into actual potash, multiply by	0.632
Actual potash into Murate potash, multiply by	1.583
Sulphate of potash into actual potash, multiply by	0.541
Actual potash into sulphate of potash, multiply by	1.85

For instance you buy 95 per cent. of nitrate of soda and want to know how much nitrogen in it, multiply 95 per cent. by 16.47 you will get 15.65 per cent. nitrogen; you want to know how much ammonia this Nitrogen is equivalent to, then multiply 15.65 per cent. by 1.214 and you get 18.99 per cent., the equivalent in ammonia.

"The attention of persons sending samples of fertilizers or commercial feeding stuff" for analysis is called to the following:

—o—

REGULATIONS GOVERNING THE TAKING AND FORWARDING OF FERTILIZER OR COMMERCIAL FEEDING STUFF SAMPLES TO THE COMMISSIONER OF AGRICULTURE. —SECTION 15 OF THE LAWS.

Special samples of fertilizers or commercial feeding stuff sent in by purchasers, under Sec 9 of the laws, shall be drawn in the presence of two disinterested witnesses, from one or more packages, thoughly mixed and a **FAIR SAMPLE OF THE SAME OF NOT LESS THAN EIGHT OUNCES (ONE-HALF POUND), SHALL BE PLACED IN A CAN OR BOTTLE, SEALED AND SENT BY A DISINTERESTED PARTY TO THE COMMISSIONER OF AGRICULTURE AT TALLAHASSEE. NOT LESS THAN EIGHT OUNCES, IN A TIN CAN OR BOTTLE, WILL BE ACCEPTED FOR ANALYSIS.** This rule is adopted to secure fair samples of sufficient size to make the necessary determinations, and to allow the preservation of a duplicate sample in case of protest or appeal. These duplicate samples will be preserved for two months from date of certificate of analysis.

The State Chemist is not the proper officer to receive special samples from the purchaser. The propriety of the method of drawing and sending the samples as fixed by the law is obvious.

The drawing and sending of special samples in rare cases is in compliance with law. Samples are frequently sent in paper packages or paper boxes, badly packed, and frequently in very small quantity (less than ounce) frequently there are no marks, numbers or other means of identification. The postmark in some instances being absent.

I would call the attention of those who desire to avail themselves of this privilege to Sections 9 and 10 of the law, which are clear and explicit.

Hereafter strict compliance with above regulations will be required. *The sample must be not less than one half pound, in a can or bottle, sealed and addressed to the*

Commissioner of Agriculture, the sender, name and address must also be on the package. This rule applying to special samples of fertilizers or commercial feeding stuff.

INSTRUCTIONS TO MANUFACTURERS AND DEALERS.

Each package of Commercial Fertilizer, and each package of Commercial Feeding Stuff, (after August 22, 1905, must have, securely attached thereto, a tag with the guaranteed analysis required by law, and the stamp showing the payment of the inspector's fee. This provision of the law—Section 3 of both laws—will be rigidly enforced. Manufacturers and dealers will be required to properly tag and stamp each package of Commercial Fertilizer or Commercial Feeding Stuff under penalty as fixed in Section 6, of both laws, tags shall be attached to the top end of each bag, or head of each barrel.

INSTRUCTIONS TO PURCHASERS.

Purchasers are cautioned to purchase no Commercial Fertilizers or Commercial Feeding Stuff (after August 22, 1905), that does not bear on *each package* an analysis tag with the guarantee required by law, and the stamp showing the payment of the inspectors fee. Goods not having the guarantee tag and stamp, are irregular, and fraudulent: the absence of the guarantee tag and stamp being evidence that the manufacturer or dealer has not complied with the law. Without the guarantee tag and stamp showing what the goods are guaranteed to contain, the purchaser has no recourse against the manufacturer or dealer, such goods are sold illegally and fraudulently, and are generally of little value. Allreputable manufacturers and dealers now comply strictly with the law and regulations by placing the guarantee tag and stamp on each package.

The interest of the consumer, the farmer, or stockman, demands that they purchase no Commercial Fertilizers, or Commercial Feeding Stuff (after August 22, 1905,) that does not have securely attached. the guarantee tag. and inspection stamp.

INSTRUCTIONS TO SHERIFFS.

The attention of the Sheriffs of the various counties is called to Section 3 of both laws, defining their duties. This department expects each Sheriff to assist in maintaining the law and protecting the citizens of the State from the imposition of fraudulent, inferior, or deficient Commercial Fertilizers or Commercial Feeding Stuff.

B. E. McLIN,
Commissioner of Agriculture.

The following tables of average composition of Commercial Feed Stuff is compiled from the report of the Conneticut Experimental Station. They cover a large number of analysis and are fully representative of the standard composition of the various feeds in the tables. They are given for reference, should a feed stuff vary materially from these averages, its purity may be questioned. If the "ash" content exceed to any great extent, sweepings may be suspected. If the crude fiber be excessive, oat hulls, corn cobs, or other liguous or fibrous materials may be suspected. While the valuable constituents, "protein" "sugar and starch," and "fat," should not materially vary from these tables of averages, that are practically standards of comparison, for the feeds mentioned in the tables.

BUREAU OF FERTILIZERS.

R. E. ROSE, State Chemist. MARION G. DONK, Assistant Chemist.

Analysis of Special Samples under Sec. 9, Act approved May 22, 1901.

(Samples taken by purchaser).

NAME OR BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
Blackshear Cotton Seed Meal	640	.....	.....	.....	....	6.56		Florida Cotton Oil Co., Jacksonville, Fla.
Special Mixture	641	6.55	3.45	1.64	5.09	8.14	10.18	Geo. W. Ruple, Ft. Pierce, Fla.
Cocoanut Leaf Ashes	642	.....	.....	.....	8.30	.....	1.31	Wise Perry, Munyon Island, Fla.
Steamed Bone Meal	643	.....	.....	.....	24.67	3.59	.....	Manatee Fert. Co., Palmetto, Fla.
Acid Phosphate	644	.....	13.10	4.75	17.80	.....	.....	Lockhart Little, South Jacksonville.
Tobacco Dust	645	.....	.....		.....	1.60	1.58	H. A. Carlson, Hollendale, Fla
Fertilizer	646	.....	7.52	2.02	9.54	2.24	11.35	J. F. Walden, Dover, Fla.
Fertilizer	647	.....	.....	.....	15.96	3.90	11.92	E. B, Rowland, St. Petersburg, Fla.
Fertilizer No. 1	648	.....	6.58	1.25	7.83	2.51	9.34	N. A. Perry, Pomona, Fla.
Fertilizer No. 2 (Bone Meal)	649	.....	.....	.....	23.44	4.20	.....	N. A. Perry, Pomona, Fla.
Fertilizer No. 3 (Potash Salt)	650	.....	.....	.....	.....	.....	27.64	N. A. Perry, Pomona, Fla.
Fertilizer No. 4	651	.....	6.76	0.33	7.09	4.66	12.87	N, A Perry, Pomona, Fla.
Fertilizer	652	.....	.....	.....	21.52	4.50	0.24	N. A. Perry, Pomona, Fla.
Fertilizer	653	.....	.....	.....	17.05	2.72	13.66	Herbert Fleming, Kissimmee, Fla.
Fertilizer No. 551	654	.....	6.61	0.42	7.03	4.31	12.22	J. O. R. Varn, Lilly, Fla.
Fertilizer No. 552	655	.....	6.47	0.40	6.87	4.15	12.80	J. O. R. Varn, Lilly, Fla.
Fertilizer No. 553	656	.....	7.14	0.40	7.54	4.25	11.82	J. O. R. Varn, Lilly, Fla.

NAME OR BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer No. 1	657	....	2.84	0.70	3.50	5.68	11.26	F. W. Mathis, Miami, Fla.
Pertilizer No. 2	658	.....	2.51	0.56	3.07	5.91	10.22	F. W. Mathis, Miami, Fla.
Cotton Seed Meal	659	....	......	....	......	7.61	......	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	660	....	......	....	......	7.57	......	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	661	.....	......	....	..	7.61	.....	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	662	....	......	....	.....	7.42	......	Tallahassee C. O. Co., Tallahassee, Fla
Cotton Seed Meal	663	.....	....	....	.....	7.12	....	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	664	....	......	....	......	7.48	...	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	665	....	......	.....	......	7.48	......	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	666	....	......	....	......	7.45	......	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	667	....	......	....	......	7.62	......	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	668	.....	......	....	......	7.27	....	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	669	....	.....	....	......	7.48	......	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	670	......	......	....	....	7.55	.....	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	671	....	......	....	......	7.69	......	Tallahassee C. O. Co., Tallahassee, Fla.
Cotton Seed Meal	672		......	....	.....	7.49	....	Tallahassee C. O. Co., Tallahassee, Fla.
Fertilizer	673	7.10	6.89	0.44	7.33	4.35	8.06	W. A. MacWilliams, St. Augustine, Fla.
Fertilizer (Potash Salt)	674	....	...	..	..	.....	46.84	J. E. Smith, Lakeland Fla.
Fertilizer	675	......	8.29	3.88	12.17	4.24	11.77	R. H. Rouseau, Boyton, Fla.
Fertilizer (Tobacco Dust)	676	......	......	..	..	2.82	9.60	J. E. Smith, Ft. Pierce, Fla.
Cotton Seed Meal	677	...	.....	......	2.56	7.51	1.81	H. W. Ellis Caryville, Fla.
Cotton Seed Meal	678	.....	.....	..	2.13	6.84	1.42	O. B. Gawse, Astatula, Fla.

NAME OR BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer	679	10.80	8.94	0.70	9.64	2.03	1.52	J. D. Clark, Mt. Pleasant, Fla.
Acid Phosphate	680	13.30	14.52	0.52	15.04	......	......	J. D Clark, Mt. Pleasant. Fla.
Hard Wood Ashes.	681	.....	......	.....	.....		0.98	R. M. Brumby, Dunedin, Fla.
Guano	682	16.00	7.53	1.64	9.17	9.30	1.66	R. M. Brumby, Dunedin, Fla.
Fertilizer ., ...	683	......	8.40	1.69	10.09	2.78	7.20	Louis R. Chazelle, Ocala, Fla.
Fertilizer.	684	.....	7.21	0.20	7.41	3.43	8.50	Louis R. Chazelle, Ocala, Fla.
Cotton Seed Meal...............	685	.....	.....	....	...	4.16	......	J. C. Van Peet, Pensacola, Fla.
Cotton Seed Meal	686	......	.....	.....	......	8.56	......	Uniontown C. O. Co., Uniontown, Ala.
Fertilizer	687	6.75	3.29	2.79	6.08	4.03	6.03	F. L. Tenbroke, Delray, Fla.
Fertilizer	688	3.95	......		12.10	2.65	24.60	Schroeder & Auguinbau, Quincy, Fla.
Fertilizer.......	689	10.60	7.76	0.76	8.52	2.50	3.06	H. A. Perry, Pomona, Fla
Ashes No. 1, Light............	690	......	..	..	.....	.. .	2.61	C. W. Springstead, St. Petersburg, Fla.
Ashes No. 2, Dark............	691	......	......	..	.. ..	......	2.26	C. W. Springstead, St. Petersburg, Fla.
Fertilizer No. 1....	692	9.50	6.01	0.67	6.68	3.94	6.85	N. A Faulkner, Arcadia Fla.
Fertilizer No. 2...............	683	6.25	7.54	0.50	8.04	4.00	13.00	N. A. Faulkner, Arcadia, Fla.
Fertilizer No. 3	664	8.55	4.61	..	4.61	4.49	13.67	N. A Faulkner Arcadia. Fla.
Fertilizer No. 4............	695	7.10	5.80	0.50	6.30	4.82	11.48	N. A. Faulkner, Arcadia, Fla.
Fertilizer No. 5	696	9.75	6.51	.. ..	6.51	5.53	6.88	N. A. Faulkner Arcadia. Fla.
Cotton Seed Meal	697	.....	......	..		8.50	.....	W. H. Towles, Ft Myers, Fla.
Acid Phosphate........ ...	698	......	13.42	0.42	13.84	..	.... ..	R. G. Johnson, Tallahassee, Fla.
Bright Cotton Seed Meal.......	699	......	... ..	.. ..	.....	7.32	.....	Boardman Lumber Co., Ro man, Fla.
H. G. Blood and Bone	700	......	..	..	4.89	9.73	..	J. F. Almstead, West Palm Beach, Fla.

NAME OR BRAND.	Labortory No.	Moisture.	Phosphoric Acid			Ammonia.	Potash (K20)	BY WHOM SENT.
			Available	Insoluble	Total			
Special Mixture	701	......	......	......	17.34	3.70	9.28	J. F. Amstead, West Palm Beach, Fla.
Fertilizer	702	......	6.60	1.18	7.78	2.40	9.88	Geo. Marshall, Pomona, Fla
Fertilizer	703	......	7.70	1.97	9.67	3.18	11.94	Geo. W. Blackburn, Sarasota, Fla.
Disolved Bone and Potash	704	......	10.42	4.45	14.87	2.44	6.33	J. E. Crow, St. Petersburg, Fla.
Fertilizer No. 1	705	......	12.80	1.29	14.09	2.88	4.77	Mrs. W. B. Cooley, Dania, Fla.
Fertilizer No. 2	706	......	12.94	0.78	13.72	4.09	4.44	Mrs. W. B. Cooley. Dania, Fla.
Fertilizer No. 3	707	......	14.67	3.00	17.67	2.59	4.28	Mrs. W. B. Cooley Dania. Fla.
Fertilizer No. 4	708	......	13.37	0.83	14.20	2.61	4.84	Mrs. W. B. Cooley, Dania. Fla.
Cotton Seed Meal No. 1	709	......	......	......	......	8.82	......	Campbell & Butler, Chipley, Fla.
Cotton Seed Meal No. 2	710	......	......	......	......	8.94	......	Campbell & Butler, Chipley, Fla.
Cotton Seed Meal No. 3	711	......	......	......	......	9.08	......	Campbell & Butler, Chipley, Fla.
Cotton Seed Meal No. 1	712	......	......	......	......	8.46	......	Florida Tobacco Co Quincy, Fla.
Cotton Seed Meal No. 2	713	......	......	......	......	7.46	......	Florida Tobacco Co . Quincy, Fla.
Cotton Seed Meal No. 3	714	......	......	......	......	7.99	......	Florida Tobacco Co , Quincy, Fla.
Cotton Seed Meal No. 4	715	......	......	......	......	8.19	......	Florida Tobacco Co., Quincy, Fla.
Cotton Seed Meal	716	......	......	......	......	7.20	......	Stringfellow Bros., Jacksonville, Fla.
Cotton Seed Meal No. 1	717	......	......	......	3.39	8.54	1.87	J A Chaffin & Co , Milton, Fla.
Cotton Seed Meal No 2	718	......	......	......	2.62	7.73	1.74	J. A. Chaffin & Co., Milton, Fla.
Fertilizer (Potash Salt)	719	......	......		......	......	28.08	N. A. Perry, Pomona, Fla.
Fertilizer (Bone)	720	......	......		21.87	4.30	......	N. A Perry, Pomona, Fla.
Marianna Home Mixtnre	721	......	6.93	0.46	7.39	2.88	3.51	Marianna Manufac'ng Co., Marianna Fla.
H G. Acid Phosphate & Potash	722	......	10.14	0.78	10.92	....	4.09	Marianna Manufac'ng Co., Mariadna, Fla.

NAME OR BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
Fertilizer No. 1, Coarse	273	......	7.25	2.32	9.57	3.04	8.83	A. B. Harrington, Winter Haven, Fla.
Fertilizer No. 2, Fine	724	.....	11.55	2.23	13.78	1.95	6.12	A. B. Harrington, Winter Haven, Fla.
Fertilizer	725	......	......	......	15.20	3.03	17.98	Fla. Tobacco Co., Havana, Fla.
Fertilizer No. 1	726	......	......	.....	14.88	2.80	17.80	J. D Scott, Quincy, Fla.
Fertilizer No. 2	727	6.00	......	......	12.15	3.15	14.37	J. D. Scott, Quincy, Fla.
Fla. Tobacco Co's Formula	728	......	..	......	18.34	2.79	14.77	E B. Shelfer Co., Quincy, Fla.
Fertilizer	729	.....	5.34	0.71	6.47	5.05	12.15	F. E Waldrop Wauchula, Fla.
Fertilizer	730	......	4.37	2.18	6.55	4.15	5.34	G. H. Haymans, Wauchula, Fla.
Fertilizer	731	7.40	4.45	2.43	6.88	4.17	5.48	A. W. Carlton, Wauchula, Fla.
Fertilizer	732	9.20	6.58	0.67	7.25	3.98	5.07	E S. Bostic, Wauchula, Fla.
Dissolved Bone	733	.....	9.81	3.52	13.33	1.51	......	L. B. Woods, Gainsville, Fla.
Blood and Bone	734	.....	......	.....	16.21	6.45	......	L. B. Woods, Gainsville. Fla
Fertilizer	735	......	......	.....	6.28	5.50	5.51	John L. McFarlin, Quincy Fla.
Fertilizer	736	......	9.99	2.66	12.65	1.83	1.91	J. J. Payne. Bonifay, Fla.
Fertilizer	737	......	3.44	1.94	5.38	2.30	7.14	J. T. Evans, Youmans, Fla.
Fertilizer	738	......	6.22	3.45	9.67	3.80	8.90	Ed. L. Hudnnl, Wauchula, Fla.
Phosphate	739	.....	11.48	0.98	12.46	.....	1.43	B. F. Glass Glass, Fla.
Guano	740	......	9.05	0.76	9.81	2.24	1.92	B. F. Glass, Glass, Fla.
Cotton Seed Meal	741	......	......	......	......	7.56	......	H. S. Cummings, Rodman, Fla.
Hickory Ashes	742	......	.....	.. ..	..	......	1.98	J. A Hanson, Leesburg, Fla.
Guano	743	......	8.28	1.21	10.09	0.24	2.10	C. E. Byrd, Graceville Fla.
Fertilizer No 9	744	.....	5.85	1.87	7.72	4.08	11.86	D. G Harvard. Arredondo, Fla.

NAME OR BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K20)	TO WHOM SENT
			Available	Insoluble	Total			
Fertilizer	745	10.80	5.73	1.60	7.33	4.99	5.51	H. J. Thomas, (No address.)
Special Mixture No. 9	746	6.05	5.04	0.25	5.29	5.75	6.02	W. D. Griffin, Komoka, Fla.
Special Mixture No. 21	747	4.80	4.89	2.03	6.92	2.89	10.88	W. D. Griffin, Komoka, Fla.
Special Mixture No. 23	748	5.35	5.90	.....	5.90	5.44	16608	W. D. Griffin. Komoka, Fla.
Fertilizer	749	7.70	8.43	1.11	9.54	3.15	3.61	Owen & Watkins, Knights, Fla.
Fertilizer	750	10.80	7.59	1.14	8.73	4.92	6.19	C. G. Philips, Fulford, Fla.
Fertilizer	751	14.60	5.76	2.57	8.33	3.16	4.66	F. R. Coker, Ona, Fla.
Fertilizer	752	8.05	5.17	2.28	7.45	2.06	15.05	Geo. A. Spross, Winter Haven, Fla.
Fertilizer	753	9.30	5.36	0.64	6.00	4.90	2.05	W. R. Varn. Lily, Fla.
H. G. Blood and Bone	754	......	......	......	8.09	9.90	......	J. G. May, Ft. Pierce, Fla.
Fertilizer No. 1	755	......	......	......	10.12	9.48	5.68	J. W. Sample, Bartow, Fla.
Fertilizer No 2	756	......	......	......	20.26	3.18	3.60	J. W. Sample Bartow, Fla.
Sulphate of Ammonia	757	......	......	......	......	25.60	.....	Sanders Fertilizer Co., Jacksonville Fla.
Bright Cotton Seed Meal	758	......	......	......	......	7.86	......	Sanders Fertilizer Co., Jacksonville, Fla.
Castor Pomace	759	.....	......	.....	......	5.81	......	Sanders Fertilizer Co., Jacksonville, Fla.
Blood and Bone	760	......	.....	......	9.26	9.21	.....	Sanders Fertilizer Co., Jacksonville, Fla.

NAME OR BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insolub'e	Total			
Raw Ground Bone	761	.		.....	21.41	4.78	......	Sanders' Fertilizer Co., Jacksonville, Fla.
Standard Cukes, Special	762	10.10	5.83	3.65	9.68	4.49	7.24	Sanders' Fertilizer Co., Jacksonville, Fla.
Standard Tomato, Special	763	9.30	5.77	2.87	8.64	3.90	9.48	C. W. Stalls, Gainesville, Fla.
Fertilizers	764	....	10.42	0.00	10.42	2.80	11.81	David H. Barrick, Braidentown, Fla.
Soft Phosphate (?)	765	......	.....	....	Trac-	....	......	H. C. Bush, Hudson, Fla.
Fertilizer	766	10.90	9.03	1.90	10.93	2.44	1.99	D. H. Gilbert, Monticello, Fla.
Fertilizer No. 1	767	......	7.35	0.35	8.70	3.27	10.40	J. E. Rawlinson, Lilly, Fla.
Fertilizer No. 2	768	.. ..	7.67	0.33	8.00	3.39	10.45	J. E. Rawlinson, Lilly, Fla.
Fertilizer No. 3	769	.. ..	5.70	0.90	6.60	4.79	6.75	J. E. Rawlinson, Lilly, Fla.
Fertilizer	770	6.00	5.32	2.67	7.99	2.78	7.00	G. E. Purdy, Bushnell, Fla.
H. G. Blood and Bone	771	.....	.. ..	......	4.04	10.80	....	Florida Fert. Manufac. Co., Gainesville, Fla.
Nitrate of Soda	772	.. ..	....	....	....	18.54	. .	Florida Fert. Manufac. Co., Gainesville, Fla.
Liquid Plant Food	773	......	.....	.. ..	. .	6.84	1.44	Griffings Bros., Jacksonville, Fla.
Fertilizer	774	9.00	4.66	2.43	7.09	2.54	6.95	E. S. Vining, Bushnell, Fla.
Fertilizer (A)	775	8.75	5.63	2.80	8.43	2.86	5.42	E. S. Vining, Bushnell, Fla.
Ground Bone	776	. ..	.. ..		22.08	4.55	..	J. E Crow, Largo, Fla.
Raw Bone and Potash	777	.. ..	6.84	3.95	10.79	1.97	13.71	J. E. Crow, Largo, Fla.
Bone and Potash	778	. ..	7.80	2.47	10.27	1.50	9.66	J. E. Crow, Largo, Fla.
Fertilizer	779	10.60	7.02	1.67	10.60	4.10	4.57	Chas. Mercer, Ona, Fla.
Fertilizer	780	8.75	6.26	0.00	6.26	3.19	14.22	Chas. Mercer, Ona, Fla.
H. G. Blood, Bone and Potash	781	.. ..	. . ..	..	6.29	7.86	10.63	L. G. May, Fort Pierce, Fla.
Dried Blood	782	......	.	..	......	16.89	..	J. W. Weeks, Punta Gorda, Fla.

NAME OR BRAND	Laboratory No.	Moisture	Phosphoric Acid			Ammonia	Potash (K2O)	BY WHOM SENT
			Available	Insoluble	Total			
Pure Ground Bone	783	......	..	..	22.30	3.92	.	C. W. Weeks, Punta Gorda, Fla.
Fertilizer	784	......	10.04	0.25	10.29	2.70	3.65	Walter Walsh, Jr., Concord, Fla.
Fertilizer	785	......	7.33	2.72	10.05	2.10	1.89	Walter Walsh, Jr., Concord, Fla.
Special Mixture	786	...	10.16	0.25	10.41	2.38	2.09	Walter Walsh, Jr., Concord, Fla.
Export Super Phosphate	787	14.10	18.63	0.61	19.24	.	.....	Goulding Fert. Co., Pensacola, Fla.
Fertilizer	788	....	5.84	0.65	6.49	3.95	14.02	J. W. Whitehurst, Sutherland, Fla.
Fertilizer	789	......	15.51	5.21	20.72	9.15	13.94	Walter Cliff, Crescent City, Fla.
Fertilizer No. 1	790	12.10	8.09	0.87	6.96	3.26	5.69	G. E. Purdy, Bushnell, Fla.
Fertilizer No. 2	791	9.60	7.24	1.78	9.02	3.69	12.04	G. E. Purdy, Bushnell, Fla.
Fertilizer	792	10.00	6.10	0.89	6.99	4.92	5.17	W. E. Wilson, Arcadia, Fla.
Fertilizer	793	9.80	4.58	1.88	6.46	3.88	5.68	J. M. Farr, Wauchula, Fla.
Fertilizer	794	.. ..	5.78	0.58	6.36	3.88	13.67	J. W. Whitehurst, Sutherland, Fla.
Fertilizer	795		3.36	2.60	5.96	6.56	6.59	Dr. Henry Ehrlick, Fort Pierce, Fla.
Fertilizer	796	10.15	6.88	1.67	8.55	3.34	5.75	J. W. Shepard, Webster, Fla.
Fertilizer	797	9.90	6.93	1.60	8.53	3.33	5.74	R. B. Middleter, Webster, Fla.
H. G. Blood and Bone	798	10.40	......	..	8.22	9.54	......	J. G. May, Fort Pierce, Fla.
Special Mixture	799	7.35	......	.	8.82	6.69	11.75	J. G. May, Fort Pierce, Fla.
Fertilizer	800	12.00	6.84	0.39	7.23	4.52	6.95	L. F. Peters, Wauchula, Fla.

For values see heading "Bureau of Fertilizers."

NOTE—This department is not aware of the source of the goods, or the names of manufacturers of "Special Samples" sent in by purchasers. Dealers frequently send in samples of goods for examination before purchasing. A "Special Sample' sent in by a dealer or manufacturer hence is not an evidence that the goods are offered by him for sale. The "Official Samples" taken by the State Chemist, or his assistant, on followng pages, state the name of the goods and the manufacturers, the guaranteed analysis, and the amount of fertilizing ingredients found by the State Chemist.

Moisture not determined in samples sent in paper or wood boxes.

Tobacco stems and tobacco dust contain some phosphoric acid, but it is bought for the potash and ammonia content. Cotton seed meal contains some phosphoric acid and some potash, but is bought for the ammonia content.

Where only the insoluble phosphoric acid is given in the table, it has been determined as total phosphoric acid.

Not less than eight ounces (½ pound), is required for a "Special Sample."

Special attention is called to the "Caution to Purchasers of Cotton Seed Meal" on another page. This adulterated meal is sold as bright or prime meal--though the guarantee is but 4½ per cent. of ammonia--it is evidently adulterated with rice hulls, its value is but little more than half that of prime meal.

R. E. ROSE, STATE CHEMIST, ANALYSIS OF FERTILIZERS, 1904, MARION G. DONK, ASSISTANT CHEMIST.

Samples taken by State Chemist under Section 1, Act approved May 22 1901.

NAME OR BRAND	Laboratory Number		Moisture	PHOSPHORIC ACID			Ammonia	Potash (K2O)	BY WHOM AND WHERE MANUFACTURED
				Available	Insoluble	Total			
Dark Cotton Seed Meal.	444	**Guarant'd Analysis.**	......	......	......		5.00	......	Florida C O. Co , Jacksonville.
		Official Analysis....	......	......	....	......	4.59	......	
Bradley's Fruit and Vine Fert..................	445	**Guarant'd Analysis.**	13.00	5.50	1.00	......	2.25	10.00	American Agr'l Chem. Co., New York.
		Official Analysis....	9.05	6.35	1.40	7.75	2.38	9.41	
Farmer's Favorite Fert.	446	**Guarant'd Analysis.**	13.00	8.00	1.00	......	2.00	1.00	American Agr'l Chem. Co., New York.
		Official Analysis....	2.25	7.44	3.08	10.52	2.60	1.63	
Baker's Veg. Manure...	447	**Guarant'd Analysis.**	13.00	4.50	1.00	......	3.50	10.00	American Agr'l Chem Co., New York.
		Official Analysis....	6.90	5.55	2.94	8.49	3.70	9.42	
Williams & Clark's Nursery Stock...........	448	**Guarant'd Analysis.**	13.00	8.00	1.00	......	4.50	3.00	American Agr'l Chem Co., New York.
		Official Analysis....	8.30	8.25	1.34	9.59	4.66	4.30	

Baker's Fruit and Vine Manure	449	**Guarant'd Analysis.**	13.00	6.00	1.00	.....	2.00	10.00	American Agr'l Chem Co , New York.
		Official Analysis....	8.75	6.78	1.12	7.90	2 36	10.16	
Williams & Clark's Standard	450	**Guarant'd Analysis.**	13.00	6 00	1.00	.....	3.00	6.00	American Agr'l Chem. Co.. New York.
		Official Analysis....	8 95	6.99	1.58	8.57	3.40	6.01	
Williams & Clark's Vegetable	451	**Guarant'd Analysis.**	13.00	6.00	1.00	...	4.00	5.00	American Agr'l Chem. Co., New York.
		Official Analysis....	8.00	6.54	2.36	8.90	3.73	5.09	
Williams & Clark's Special Fruit and Vine	452	**Guarant'd Analysis.**	13 00	5.50	1 00	....	4 50	10.00	American Agr'l Chem. Co., New York.
		Official Analysis....	7.90	6.00	0.84	6.84	4.56	10.70	
Special Bone and Potash	453	**Guarant'd Analysis.**	13.00	12.00	1 00	...	.....	12.00	American Agr'l Chem Co , New York.
		Official Analysis....	8.35	12 99	1.78	13.77	.....	11.13	
Williams & Clark's Orange Tree	454	**Guarant'd Analysis.**	13 00	6.00	1 00	.....	3 50	5.00	American Agr'l Chem. Co., New York.
		Official Analysis....	8 40	6.40	1.64	8.04	3.75	5.60	
Strawberry Fertilizer	455	**Guarant'd Analysis.**	8.00	6.00	2.00	....	2.50	8.00	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	12.80	7.01	1.75	8.76	2.58	7.76	
H. G. Blood and Bone	456	**Guarant'd Analysis.**	5.00	5.00	1.00	.....	10.00	......	Tampa Fertilizer Co , Tampa, Fla
		Official Analysis....	5 90	4.38	2 83	7..1	10.20	......	
Blood, Bone and Potash.	457	**Guarant'd Analysis.**	8 00	6.00	3.00	...	4.00	4.00	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	13 90	6 03	3 29	9.32	4.25	4.68	
Fruit and Vine Fertilizer	458	**Guarant'd Analysis.**	8.00	6 00	1.00	.	2.00	12 00	Tampa Fertilizer Co , Tampa, Fla
		Official Analysis....	6.55	6.90	2.17	9 07	2.15	12.74	

Orange Tree Special...	459	**Guarant'd Analysis.**	8.00	6.00	1.00	.....	2.00	16.00	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	4.50	6.86	2.16	9.02	2.60	16.28	
Pineapple Manure.......	460	**Guarant'd Analysis.**	8.00	5.00	.....	.....	6.00	4.00	Tampa Fertilizer Co., Tampa, Fla.
		Official Analysis....	6.70	5.32	1.96	7.28	4.84	8.79	
Florida Fruit Grower's Formula	461	**Guarant'd Analysis.**	...	7.00	......	....	3.50	4.00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	3.35	7.81	0.68	8.47	5.60	5.97	
Georgia State Standard.	462	**Guarant'd Analysis.**	.....	8.00	.....		2.00	2.00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis...	13.15	8.46	1.47	9.93	2.12	2.12	
Tropical Vegetable......	463	**Guarant'd Analysis.**	.....	8.00	......	......	3.00	3.00	Va.-Car. Chem. Co. Savannah, Ga.
		Official Analysis....	11.15	8.88	0.50	9.30	2.74	4.06	
Strawberry Special.....	464	**Guarant'd Analysis.**	......	6.00	......		3.00	5.00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	14.70	7.4	0.50	7.94	3.13	5.98	
Southern States Special.	465	**Guarant'd Analysis.**	......	6.00	..	.....	4.00	5.00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	3.70	5.90	0.75	6.6	4.52	6.59	
Tip Top Tomato	466	**Guarant'd Analysis.**	....	7.00	..	.....	4.00	5.00	Va.-Car. Chem. Co., Savannah, Ga.
		Official Analysis....	9.80	7.78	0.75	8.53	3.48	4.41	
Lettuce and Cuke Special	467	**Guarant'd Analysis.**	10.00	5.00	..	...	7.00	4.00	Florida Fert. Co., Gainesville, Fla.
		Official Analysis....	9.60	6.30	0.92	7.22	3.33	4.00	
No. 1 Peruvian and Fish Mixture.............	468	**Guarant'd Analysis.**	12.00	5.00	1.00	..	4.50	5.00	Florida Fert. Co., Gainesville, Fla.
		Official Analysis....	9.55	6.61	1.22	7.83	4.34	4.49	

ANALYSIS OF FERTILIZERS—Continued.

No. 1 Peruvian and Fish Guano, doable strength of Potash	469	**Guarant'd Analysis.**	12.00	5.00	1.00	......	4.50	10.00	Florida Fert. Co., Gainesville, Fla.
		Official Analysis....	7.65	6.41	1.64	8.05	3.90	9.40	
Blood, Bone and Potash	470	**Guarant'd Analysis.**	12.00	4.00	2.00	......	4.00	4.00	Florida Fert. Co., Gainesville, Fla.
		Official Analysis....	10.00	6.72	1.77	8.50	3.96	6.42	
No. 2 Orange Tree Mixture, double strength of Potash	471	Guarant'd Analysis.	10.00	5.00	1.00	.....	1.50	10.00	Florida Fert. Co., Gainesville, Fla.
		Official Analysis....	8.90	6.79	1.22	8.01	2.17	9.66	
Lettuce Special	472	Guarant'd Analysis.	9.00	5.00	2.00	......	6.00	6.00	Florida Fert. Co., Gainesville, Fla.
		Official Analysis....	5.50	5.05	4.74	9.79	5.00	6.76	
Early Trucker.	473	Guarant'd Analysis.	7.00	5.00	3.00	.....	5.00	5.00	Standard Fertilizer Co. Gainesville, Fla.
		Official Analysis....	6.50	5.73	5.65	11.38	4.09	5.24	
Vegetable Fertilizer	474	**Guarant'd Analysis.**	8.00	5.00	0.00	..	4.50	6.00	Standard Fertilizer Co Gainesville, Fla.
		Official Analysis....	6.50	5.80	5.21	11.01	4.23	6.00	
Fish and Potash	475	**Guarant'd Analysis.**	10.00	3.00	1.50	..	7.00	6.00	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	10.90	4.31	1.87	6.24	7.96	5.71	
Cabbage Fertilizer	476	**Guarant'd Analysis.**	8.00	5.50	2.50	..	5.00	6.00	Standard Fertilizer Co. Gainesville, Fla.
		Official Analysis....	7.45	5.63	5.54	11.17	4.46	6.47	
Cotton Seed Meal	477	Guarant'd Analysis.	......	.....	..	.....	8.00	......	Standard Fertilizer Co., Gainesville, Fla.
		Official Analysis....	.. .	.....	......	.....	8.07	......	
Day Break Fertilizer	478	**Guarant'd Analysis.**	......	8.00	.. ..	......	2.00	2.00	Federal Chem. Co., Nashville, Tenn.
		Official Analysis....	11.88	8.38	1.46	9.84	1.86	1.74	

Goulding's Bone Compound........	479	Guarant'd Analysis.	......	8.00	......	......	2.00	2.00	Goulding Fert. Co., Pensacola, Fla.
		Official Analysis....	13.75	9.44	2.42	11.86	2.31	2.32	
Goulding's 4 per cent. Potash Acid Phosphate	480	Guarant'd Analysis.	......	8.00	......	......	......	4.00	Goulding Fert. Co., Pensacola, Fla.
		Official Analysis....	13 80	7.73	2.16	9.89	......	4.06	
Mape's Pineapple Fertilizer	481	Guarant'd Analysis.	10.00	4.00	2.00	......	5.00	5.00	Mape's F. & P. Guano Co., New York
		Official Analysis....	12.80	4.66	3.30	7.96	4.52	4.61	
Mape's Orange Tree Fertilizer	482	Guarant'd Analysis.	12.00	6.00	2.00	......	4.00	3.00	Mape's F. & P. Guano Co., New York.
		Official Analysis...	11.20	6.82	1.96	8.78	4.89	5.33	
Mape's Vegetable Manure	483	Guarant'd Analysis	12.00	6.00	2.00	......	5.00	4.00	Mape's F. & P. Guano Co., New York.
		Official Analysis....	10.20	7.06	2.03	9.09	4.67	5.40	
Mape's Fruit and Vine Manure	484	Guarant'd Analysis	10.00	5.00	2 00	......	2.00	10.00	Mape's F. & P. Guano Co., New York.
		Official Analysis....	11 45	5.70	1.75	7.45	2.47	11.49	
Potato Special...... ..	485	Guarant'd Analysis.	10.00	7.00	2.00	......	3.00	10.00	E. O. Painter Fert. Co., Jacksonville, Fla.
		Official Analysis....	6.95	5.32	0.60	5.92	5.24	12.18	
Simon Pure No. 2.......	486	Guarant'd Analysis.	8.00	6.00	2 00	......	4.00	6.00	E. O. Painter Fert. Co., Jacksonville, Fla.
		Official Analysis....	9.00	7.48	0.92	8.40	4.71	7.52	
Gem Orange Tree.......	487	Guarant'd Analysis.	8.00	5.00	3.00	......	4 00	6 00	E O. Painter Fert Co., Jacksonville, Fla.
		Official Analysis....	7.75	5.21	1.68	6.89	5.81	8.28	
Simon Pure Tomato.....	488	Guarant'd Analysis.	12.00	4.00	3.00	......	5.00	9.00	E. O. Painter Fert. Co., Jacksonville, Fla.
		Official Analysis....	9.15	5.79	1.26	7.05	6.30	8.89	

Gem Pineapple	489	Guarant'd Analysis.	10.00	.....	...	2.50	5.00	6.00	E. O. Painter Fert. Co., Jacksonville. Fla.
		Official Analysis....	7.50	1.55	0.62	2.17	5.50	6.79	
Simon Pure Garden.....	490	Guarant'd Analysis.	12.00	5.00	2.00	..	5.00	6.00	E. O Painter Fert. Co.. Jacksonville, Fla.
		Official Analysis....	7.60	5.47	1.24	6.71	5.47	7.41	
Gem Fruit and Vine....	491	Guarant'd Analysis.	8.00	6.00	1.00	..	2.50	10.00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis...	8.15	6.34	1.27	7.6	2.65	11.72	
Gem Potato Manure.....	492	Guarant'd Analysis.	10.00	4.00	1.00	...	4.00	11.00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis....	6.65	4.88	1.04	5.92	3.55	12.6	
Simon Pure No. 1.......	493	Guarant'd Analysis	8.00	6.00	1.00	...	4.00	11.00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis..	7.95	6.10	0.40	6.50	4.40	12.91	
Gem Vegetable Manure.	494	Guarant'd Analysis.	8.00	5.00	3.00	..	4.00	6.00	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis..	6.40	4.87	1.92	6.83	5.79	7.87	
H. G. Blood and Bone..	495	Guarant'd Analysis.	....	....	....	..	10.00	.....	**E. O. Painter Fertilizer Co., Jacksonville.**
		Official Analysis...	....	....	....	5.27	10.3	...	
Ideal Lettuce Fertilizer.	496	Guarant'd Analysis.	10.00	6.00	.....	....	6.00	6.00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Official Analysis....	9.90	6.98	0.62	7.60	6.95	5.13	
Special Fruit and Vine..	497	Guarant'd Analysis.	12.00	6.00	......	....	3.50	13.00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Official Analysis....	8.60	6.56	0.25	6.81	3.89	13.32	
Ideal Potato Manure....	498	Guarant'd Analysis	8.00	6.00	1.00	......	4.00	8.00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Official Analysis....	9.55	6.85	0.75	7.60	3.70	9.75	

Ideal Blood, Bone and Potash...............	499	Guarant'd Analysis.	8.00	4.00	2.00	......	5.00	6.00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Official Analysis....	6.98	4.09	1.62	6 61	4.58	7.47	
Ideal Fruit and Vine....	500	Guarant'd Analysis.	10.00	6.00	......	.....	3.00	10.00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Official Analysis....	8.40	7.20	0.50	7 70	3.25	10.35	
Florida Bean Special...	501	Guarant'd Analysis.	10.00	6 00	1.00	......	3.00	6.00	Willson & Toomer Fert Co., Jacksonville, Fla.
		Official Analysis ...	11.18	5.73	0.92	6 65	3.64	6.32	
Ideal Vegetable Manure.	502	Guarant'd Analysis.	8.00	6.00	1.00	.....	4.00	8 00	Willsón & Toomer Fert. Co., Jacksonville, Fla.
		Official Analysis....	9.65	6.75	0.75	7.50	3 68	9.80	
Florida Special Pineapple................	503	Guarant'd Analysis.	6.00	4.00	4.00		4.00	7.00	Willson & Toomer Fert. Co., Jacksonville Fla.
		Official Analysis....	4.70	5.00	3.78	8.78	4.36	7.59	
Ideal Fertilizer..........	504	Guarant'd Analysis.	8.00	5.00	1.00	.....	4.00	6 00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Official Analysis....	9.15	6.83	0.50	7.33	3.55	8.14	
Special Mixture No. 1 ..	505	Guarant'd Analysis.	8 00	6.00	1.00	...	5.00	5.00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Official Analysis....	8.55	6.84	0.50	7 34	5 93	4 61	
Cotton Seed Meal.......	506	Guarant'd Analysis.	.....	......		..	7.50	.....	Cuthbert Oil Co. Cuthbert, Ga.
		Official Analysis...	....	......	......	.....	7.83	...	
Mape's Orange Tree Manure................	507	Guarant'd Analysis.	......	6.00	3.00	.....	4.00	3 00	Mape's F. & P. Guano Co., New York.
		Official Analysis....	11.10	6.85	2.76	9.91	3 53	3.58	
Mape's Fruit and Vine Manure...............	508	Guarant'd Analysis.	..	5.00	2 00	.....	2.00	10.00	Mape's F. & P. Guano Co., New York.
		Official Analysis....	9.85	5 56	1.8	7.42	2.42	10.67	

Ideal Vegetable Manure	509	**Official Analysis....**	8.00	6.00	1.00	......	4.00	8.00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Guarant'd Analysis.	12.50	6.49	0.25	6.74	4.18	8.00	
Florida Bean Special ..	510	**Official Analysis....**	10.00	6.00	1.00	....	3.00	6.00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Guarant'd Analysis.	9.05	6.55	0.50	7.15	2.95	7.27	
Special Mixture No. 1..	511	**Official Analysis....**	8.00	6.00	1.00	...	5.00	5.00	Willson & Toomer Fert. Co., Jacksonville, Fla,
		Guarant'd Analysis.	8.20	6.27	0.50	6.77	4.67	5.17	
Strawberry Special. ..	512	**Official Analysis...**	.....	6.00	.....	.	3.50	3.00	Willson & Toomer Fert. Co., Jacksonville, Fla.
		Guarant'd Analysis.	10.20	6.38	0.50	6.88	3.50	4.03	
Peerless Pine Apple Producer.................	513	**Official Analysis....**	......	5.00	.....		5.00	6.00	Va-Car Chem Co., Savanah, Ga.
		Guarant'd Analysis.	8.85	5.52	0.25	5.72	4.83	6.00	
Fruit and Vine	514	**Official Analysis....**	8.00	6.00	1.00	.	2.50	10.00	Va Car Chem. Co., Savanah Ga.
		Guarant'd Analysis.	9.05	6.79	0.25	7.04	2.59	8.41	
Florida Fruit Grower's Formula	515	Official Analysis....	8.00	7.00	1.00	....	3.50	4.00	Va Car. Chem Co., Savanah Ga
		Guarant'd Analysis	6.35	7.85	0.75	8.60	3.66	3.88	
Tip Top Tomato.	516	**Official Analysis...**	8.00	7.00	1.00	.	4.00	5.00	Va Car. Chem Co., Savanah, Ga.
		Guarant'd Analysis.	10.35	8.23	0.25	8.48	3.82	4.30	
Champion Citrus Compound....	517	**Official Analysis....**	8.00	6.00	1.00	.. ..	3.00	14.00	Va.-Car. Chem Co., Savanah, Ga
		Guarant'd Analysis.	6.18	6.35	0.50	6.85	3.64	15.12	
Old Dominion Potato Manure.	518	**Official Analysis....**	8.00	7.00	1.00	......	5.00	8.00	Va.-Car Chem. Co., Savanah. Ga.
		Guarant'd Analysis.	14.10	7.43	0.75	8.18	4.99	7.27	

ANALYSIS OF FERTILIZERS—Continued.

Mapes Vegetable Manure	519	**Official Analysis....**	12.00	6.00	2.00	....	5.00	4.00	Mapes F. & P. Guano Co., New York,
		Guarant'd Analysis.	11.80	7.42	1.47	8.89	4.45	5.68	
Mapes Pine Apple Manure	520	**Official Analysis...**	......	4.00	2.00	.....	5.00	5.00	Mapes F. & P. Guano Co., Now York.
		Guarant'd Analysis.	17.55	5.37	1.72	7.19	4.27	4.82	
Mapes Orange Tree Manure	521	**Guarant'd Analysis.**	12.00	6.00	2.00	......	4.00	3.00	Mapes F. & P. Guano Co., New York.
		Guarant'd Analysis.	14.85	7.83	1.91	9.14	4.05	3.67	
Mapes Fruit and Vine.	522	Guarant'd Analysis	10.00	5.00	2.00	......	2.00	10.00	Mapes F. & P. Guano Co. New York.
		Official Analysis....	12.00	6.35	1.11	7.47	2.47	12.78	
Blood, Bone and Potash	524	Guarant'd Analysis	....	5.00	....	.....	7.00	10.00	E. O. Painter Fert. Co., Jacksonville, Fla.
		Official Analysis....	4.70	3.35	2.25	6.63	7.15	12.93	
Simon Pure Tomato....	525	Guarant'd Analysis.	12.09	4.00	3.00	....	5.00	9.00	E. O. Painter, Fert. Co., Jacksonville, Fla.
		Official Analysis. .	8.85	6.61	0.90	7.54	6.50	9.54	
Cotton Seed Meal.......	526	Guarant'd Analysis	....	....	......	.....	7.50	.....	Florida C. O. Co., Jacksonville, Fla.
		Official Analysis..	......	....	.....	......	7.63	......	
Nitrate of Soda	527	Guarant'd Analysis.	....	......	......	.....	17.00	.....	E. O. Painter Fert., Jacksonville, Fla.
		Official Analysis...	......	.....	......	......	18.44	.....	
Cotton Seed Meal.......	528	Guarant'd Analysis.	......	......	......	.....	7.50	....	Bainbrige C. O. Co., Bainbridge, Ga.
		Official Analysis....	....	......	......	......	8.34	....	

Cotton Seed Meal	529	**Official Analysis**					7.50		Cuthbert C. O. Co., Cuthbert, Ga.
		Guarant'd Analysis					7.44		
Cotton Seed Meal	530	**Official Analysis**				2.50	8.00		Mariana Manufacturing Co Marianno, Fla.
		Guarant'd Analysis					8.20		
Cotton Seed Meal	531	**Official Analysis**					8.00		Pensacola C. O. Co., Pensacola, Fla
		Guarant'd Analysis					7.36		
Acid Phosphate	532	**Guarant'd Analysis**		15.00					Goulding Fert. Co, Pensacola, Fla.
		Official Analysis	14.65	15.68	1.36	17.04			
H. G. Acid Phosphate	533	**Guarant'd Analysis**		18.00					Goulding Fert Co, Pensacola. Fla.
		Official Analysis	13.70	18.98	0.00	18.98			
Gouldings H. G. Acid Phosphate	534	**Guarant'd Analysis**	16.00	15.00	1.00				Goulding Fert., Co, Pensacola, Fla
		Official Analysis	14.50	15.58	1.08	16.60			
Acid Phosphate	535	**Guarant'd Analysis**		13.00					Cumberland Bone Phos. Co. Charleston, S C.
		Official Analysis	9.20	13.40	1.67	15.07			
A. L. Willsons Acid Phosphate	536	**Guarant'd Analysis**	16.00	14.00	1.00				Goulding Fert. Co. Pensacola, Fla.
		Official Analysis	14.50	14.92	1.72	16.64			
4 per cent Potash, Acid Phosphate	537	**Guarant'd Analysis**		8.00				4.00	Goulding Fert. Co., Pensacola, Fla.
		Official Analysis	12.30	8.41	2.04	10.45		3.63	
4 per cent Potash, Acid Phosphate	538	**Guarant'd Analysis**	16.00	8.00	1.00			4.00	Goulding Fert. Co Pensacola, Fla.
		Official Analysis	12.10	7.64	.96	9.60		3.79	

Armour's King Cotton..	539	**Guarant'd Analysis.**	10.00	8.00	1.00	....	2.00	2.00	Armour's Fert. Works, Jacksonville Fla
		Official Analysis....	12.45	8.77	0.75	9.52	1.83	1.34	
Standard Disolved Bone and Potash...........	540	**Guarant'd Analysis.**	12.00	10.00	2.00	......	....	2.00	Coweta Fert Co., Newman, Ga.
		Official Analysis....	10.90	9.78	1.14	10.92	.....	1.77	
Standard Cotton Fertilizer..................	541	**Guarant'd Analysis.**	10.00	8.00	......	...	2.00	2.00	Southern C. O Co., Montgomery, A.
		Official Analysis....	10.95	7.95	1.02	8.95	1.76	1.78	
Bone Compound.........	542	**Guarant'd Analysis.**		8.00	.. ..	.....	2.00	2.00	Goulding Fert. Co., Pensacola, Fla.
		Official Analysis....	13.55	9.82	2.48	12.90	2.18	2.18	
Gouldings Vegetable Compound	543	**Guarant'd Analysis.**	.....	7.00	..	.....	4.00	4.00	Goulding Fert. Co., Pensacola, Fla
		Official Analysis....	14.70	10.14	1.28	11.42	3.48	3.24	
H. G. Meal Fertilizer...	544	**Guarant'd Analysis**	16.00	10.00	....	.....	2.00	2.00	Goulding Fert. Co., Pensacola, Fla.
		Official Analysis....	16.30	10.77	0.82	11.59	1.57	2.3	

ANALYSIS OF FERTILIZERS—Continued.

Goulding's Bone Compound	545	Guarant'd Analysis Official Analysis	16.00 13.00	8.00 9.95	1.00 2.04	.. 11.99	2.00 2.23	2.00 2.19	Goulding Fert Co., Pensacola, Fla.
Cumberland Bone Super Phosphate	546	Guarant'd Analysis Official Analysis	12.00 12.90	9.00 9.50	1.00 2.16	. 16.66	2.00 2.37	1.00 1.42	Cumberland, Bone Phosphate Co., Charleston, S.C.
A. L. Willson Co. Guano	547	Guarant'd Analysis Guarant'd Analysis	16.00 12.70	8.00 8.90	1.00 3.13	2.00 12.03	2.00 2.23	2.00 2.17	Goulding Fert. Co., Pensacola, Fla.
Gem Pineapple	548	Guarant'd Analysis Official Analysis	..... 7.70	.... 2.42	...... 0.66	5.00 3.08	5.00 5.62	6.00 6.87	E. O. Painter Fert. Co., Jacksonville, Fla.
Gem Orange Tree	549	Guarant'd Analysis Official Analysis	8.00 8.30	5.00 5.56	3.00 0.89	.. 6.45	4.00 5.57	6.00 6.07	E. O. Painter Fert. Co., Jacksonville, Fla.
Simon Pure No. 1	550	Guarant'd Analysis Official Analysis	8.00 9.35	6.00 6.36	1.00 0.25	... 6.61	4.00 4.70	11.09 11.37	E. O. Painter Fert. Co., Jacksonville, Fla.
Simon Pure No. 2	551	Guarant'd Analysis Official Analysis	8.00 8.45	6.00 7.74	2.00 0.72	...... 8.46	4.00 5.13	6.00 5.97	E. O. Painter Fert. Co., Jacksonville, Fla.
Gem Fruit and Vine	552	Guarant'd Analysis Official Analysis	8.00 11.05	6.00 7.72	1.00 0.25	..... 7.97	3.00 3.25	10.00 10.63	E. G. Painter Fert. Co., Jacksonville, Fla.
Armour's Vegetable Manure	553	Guarant'd Analysis Official Analysis	10.00 7.85	7.00 6.77	2.00 1.00	...... 7.77	4.00 4.23	6.00 6.39	**Armour's Fert. Works, Jacksonville.**
Largo Special Tree Grower	554	Guarant'd Analysis Official Analysis	10.00 6.80	5.00 5.69	1.00 1.31	.... 6.00	4.00 4.23	.600 5.78	**Armour's Fert. Works, Jacksonville**

ANALYSIS OF FERTILIZERS—Gontinued

Sweet Potato Special ...	555	Guarant'd Analysis	10 00	6.50	0.50	......	2 50	3.50	**Armour's Fert. Works, Jacksonville.**
		Official Analysis	8.95	7.23	1.19	8.42	2.43	3.75	
Largo Fruit and Vine..	556	Guarant'd Analysis	10.00	6.00	1.00	......	3.00	10 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis	7.80	6.58	1.44	8.02	3.20	10.02	
Armour's Corn and Cotton Grower............	557	Guarant'd Analysis	10.00	7.00	1.00		2 00	2 00	**Armour's Fert. Works, Jacksonville.**
		Official Analysis	7.75	7.41	2.19	9.60	1 98	2.09	
Mape's Orange Tree Manure........	558	Guarant'd Analysis	12.00	6.00	2 00	..	4 00	3.00	Mape's Formula & P. G. Co., New York.
		Official Analysis	14.10	6.48	3.78	10 26	4.19	3.30	
Mape's Fruit and Vine..	559	Guarant'd Analysis	10.00	5.00	2.0.	......	2.00	10.00	Mape's Formula & P G Co., New York.
		Official Analysis	14.25	5 77	2.26	8.03	2.5	11.46	
Mape's Vegetable Manure....	560	Guarant'd Analysis	12.00	6 00	2 00	. ..	5.00	4.00	Mape's Formula & P. G. Co., New York.
		Official Analysis	13.40	6.72	1.93	8.65	4.58	5 98	
Mape's Pineapple	561	Guarant'd Analysis	10 00	4.00	2.00	......	4.00	5.00	Mape's Formula & P. G. Co., New York.
		Official Analysis	15.55	4.70	2.22	6.92	4.12	4.90	

COMMERCIAL STOCK FEFD

BY R. E. ROSE, STATE CHEMIST.

The Florida Legislature of 1905 enacted a "Commercial Feeding Stuff Law," which went into effect August 22, 1905, and was published in full in the Florida Monthly Bulletin for July 1905. This was in response to a general demand by the consumers of and dealers in such material throughout the State, who demanded relief from the large proportion of adulterated and inferior stock food sold throughout the State, at prices far above their real value, commercially or as feeding material.

The fact that a number of States had passed stringent "Stock Feed Laws" requiring the guarantee of the feeding valuef o the various feeds, with severe penalties for misrepresentation, by manufacturers and dealers, caused such states as had no such laws to become the dumping ground for the inferior feeds that could not be legally, or profitably marketed in the states having laws to protect the consumer, the dealer, and the honest manufacturers of pure and wholesome feeds from this unfair competition and misrepresentation.

Floirda purchasing as she does a very large amount of the stock feed consumed in the State, was a favorite field for these inferior, and frequently harmful so-called feeds; in fact pure feeds, brans, middlings, shorts, ship stuff, and all ground feeds were frequently difficult to procure; while numerous patent or proprietory feeds, with high sounding names and little value were sold at prices far above their value, commercially, or as feeding stuff.

In this connection I quote from a recent Bulletin of the Florida Experimental Station by Prof. A. W. Blair, on "The oCmposition of Some of the Concentrated Feeding Stuffs on Sale in Florida."

"The fact that Florida is largely a vegetable and fruit growing State, has seemed to render necessary the importation, from other states, of large quantities of concentrated feeding stuffs. I have no means of verifying the statement, but I believe that I am safe in saying that in proportion to the population, and the number of farm animals, no other State in the Union imports such large quantities of these materials for home consumption.

THE NECESSITY FOR A FEEDING STUFFS INSPECTION LAW.

"The question as to the quality of these goods seems never to have troubled us seriously. We have been content to take what the manufacturer is pleased to send us, and if the quality has been poor, either the animals have suffered or we have been compelled to buy an additional quantity to compensate for the inferior quality, or both. On the other hand we have not been content thus to accept what the manufacturers of fertlizers were sending us, but have required them to state the ingredients used in the manufacture of the goods, and guarantee that they will, on analysis, show a certain percentage of the fertilizing constituents—plant food; and we have further clothed the State Chemist with power to collect and analyze samples and publish to the State the results of his work, in order that the farmer and fruit grower may be protected from the sale of adulterated goods.

"But a large quantity, perhaps the largest quantity of commercial fertilizers used in the State is manufactured here, and to say to the fertlizer manufacturers of this State, 'You must make your fertilizers, which you furnish us for growing our crops, come up to a definite guarantee,' while we say to the manufacturers of concentrated feeding stuffs in other states (for practically all the ground products on the market come from other states), 'you may send to us for feeding our stock whatever grade of goods you choose,' does not seem entirely just to the manufacturer of fertilizers.

"It is, perhaps, true that greater loss would result from the use of inferior fertlizers than from the use of inferior feeding stuffs, and that it is easier to practice deception with the former than with the latter, still this does not make it less important that he who buys feeding stuffs should be protected from inferior and fraudulent goods. The great variety of mixed feeds, and proprietary feeds, makes it comparatively easy to deceive, even those who have had considerable experience in handling such goods. How many of those who buy feeding stuffs can say that they do not contain ground corn cobs, rice hulls, corn bran, etc., any more than the farmer can say that his fertilizers do not contain low grade materials, worth but little more than half the price asked for them? The fact that the following States, viz: Maine, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, North Carolina, Maryland, Tennessee, Indiana, Wisconsin, Pennsylvania, Louisiana and Ohio, now have feeding stuff laws in operation, would seem to indicate pretty clearly that there is need to guard against adulteration and fraudulent practice. This fact in itself ought to be sufficient to bring us to our senses; for we need not think for one moment that the manufacturers will stop placing upon the market inferior goods, so long as there are places like South Carolina, Georgia, Florida and Alabama to be used as dumping grounds for what more than half of the states east of the Mississippi will not have.

CLASSIFICATION OF FEEDING STUFFS.

"In a general way, feeding stuffs may be classified as *protein* (nitrogenous) feeds; and *starchy* (carbohydrate) feeds; though this distinction is only relative, since there is no distinct dividing line between the two classes.

"Nearly all contain both protein and carbohydrates, but those high in protein, like cotton seed meal, linseed meal, gluten meal, and a number of others, are usually classified as protein feeds; while those low in protein and high in carbohydrates, like corn, corn and cob meal, oats, barley and others, represent the starchy or carbohydrate feeds.

"Each class of substances has a distinct office to perform in the animal organism, and it is important that the purchaser should understand something of the uses of these two classes, and have a fair knowledge of the amount of each contained in the various feeding stuffs, so that he may purchase that which he most needs, and at the same time that which is most economical.

TERMS USED IN DISCUSSING FOODS AND FEEDING STUFFS.

"By chemical analysis, feeding stuffs are separated into six classes of substance, viz: Water, ash, protein, fiber, nitrogen-free extract and fat.

"*Water* is contained in all feeding stuffs, even the dryest hays and grains, and varies from 8 to 15 per cent. in this class to 80 per cent in silage, and 90 per cent in some roots.

"*Ash* is left when the combustible part of a feeding stuff is burned away. It consists chiefly of lime, magnesia, potash, soda, iron, chlorine, and carbonic, sulphuric, and phosphoric acids and is used largely in building up the bony structure.

"*Protein* (nitrogenous matter) is the name of a group of substances containing nitrogen. Protein furnishes the material for the lean flesh, blood, skin, muscles, tendons, nerves, hair, bones, wool, casein of milk, albumen of eggs, etc., and is one of the most important constituents of feeding stuffs.

"*Crude Fiber* (cellulose) is the frame work of plants, and is, as a rule, the most indigestible constituent of feeding stuffs. The coarse fodders, such as hay and straw, contain a much largen percentage of fiber than the grains, oil cakes, etc.

"*Nitrogen-Free Extract* includes starch, sugar, gums, and the like, and forms an important part of all feeding stuffs, but especially of most grains.

"*Fat*, or the materials dissolved from feeding stuffs by ether, is a substance of mixed character, and may include, besides real fats, wax, the green coloring matter of plants, etc. The fat of food is either stored up in the body as fat or burned to furnish heat and energy. The crude fiber and nitrogen free extract, taken together, make up what are known as the carbohydrates. Fats and carbohydrates perform the same office in the body—those of the production of heat and force, or energy—that is, they keep the body warm and the machinery running. For this purpose one pound of fat is considered equivalent to about two and one-fourth pounds of carbohydrates. (Starch and sugar.)

NECESSITY FOR HOME-GROWN FEEDING MATERIALS.

"Feeding stuffs suppliyng these starchy substances, such as corn, oats, velvet beans, cow pea, and beggarweed hay, can be successfully grown in Florida; and when it becomes necessary to supplement these, as in many cases it does with imported feed stuffs, only those should be imported which are much higher in protein than the home-grown products.

"Obviously, then, it is poor economy to import from other sections of the country feeding stuffs low in protein—the most expensive and important ingredient—when they can be produced at home at less cost.

"But that is just what Florida is doing. Many thousans of dollars are being sent out of the State for feeding stuffs, the equivalent of which can and should be produced within our own borders; and many more thousands are being spent for materials, which, when true to name, are fairly rich in protein, but which come to us below the standard quality, and which should, therefore, be subject to a law similar to that which prevents the sale of inferior fertlizers in the State.

INVESTIGATION OF FEEDING STUFFS NOW ON THE MARKET.

"Believing that this condition existed, the Chemical Department of the Experiment Station began, last November, an investigation with a view to ascertaining the exact extent to which low grade and adulterated feeding stuffs are being placed upon the market.

"Samples were secured from the various sections of the State, largely through students of the University who went to their homes at the Thanksgiving and Christmas vacations.

"They were instructed to secure samples of the different concentrated feeds, which should, so far as possible, represent the whole lot from which they were taken, and also to secure the trade name, name and location of the manufacturer, and the selling price per sack of 100 pounds, or per ton, in the case of wholesale dealers. The names of dealers are reserved, since it is not intended to work any hardship to the wholesaler or retailer, so long a sthere is no law requiring them to maintain a certain standard.

"As a result of this, forty-three samples, representing a considerable variety of feeding stuffs, and collected from different parts of the State, have been analyzed. It would have been much better could the number of samples and localities represented been greater, but the limited time and pressure of other work did not permit this.

"It is believed, however, that the work represents, fairly well, the feeding stuffs on sale throughout the State.

BRAN.

"Taking up first the brans and comparing their protein and fat content with the standard, we find that all of the samples examined fail to come up to the minimum standard requirement in protein—15 per cent.

"Number 1799 is very low in protein and fat, while the fiber—the indigestible part—is over 17 per cent, whereas, in good wheat bran it should not much exceed 9 per cent. This sample was highly adulterated with ground corn cobs and screenings.

"Number 1714 contained wheat chaff, corn bran, and various pieces of foreign matter, indicating mill sweepings. Numbers 1726, 1730, and 1731 contained corn bran; 1807, dirt and oat chaff, and 1831, chaff, corn bran and other foreign matter, probably mill sweepings. The average retail price for eight of the twelve sample is $1.38 per sack of 100 pounds, ($27.60 per ton) which is undoubtedly excessive when it is remembered taht not one of the samples comes up to the minimum standard for pure wheat bran.

CORN AND OAT FEEDS.

"Six samples of Purina, four of Victor and one each of Boss, Parcell and Mack's Mule Feed, are corn and oat feeds, and are composed of cracked corn, ground or crushed oats and oat hulls, the oat hulls in most cases predominating. These are no doubt, the product of cereal food mills, and furnish a means of disposing of the oat hull at a good profit. They have a fair feeding value, though in most cases this is not in proportion to the price asked for them.

"The average protein content of the four samples of Victor Feed is only 7.62 per cent while the fat is 3.05 per cent, and in this connection it is interesting to note that five samples of Victor corn and oat feed manufactured by the American Cereal Company and analyzed at the New Jersey Station, gave an average of 8.64 per cent of protein and 4.50 per cent of fat, and five samples analyzed at the Connecticut Station gave 8.26 per cent protein and 3.93 per cent of fat, and sold at an average price of $25.40 per ton. Both New Jersey and Connecticut have inspection laws.

"The sample of Mack's Muel Feed is very low in protein and fat, and high in crude fiber and ash, indicating clearly the predominance of oat hulls.

MISCELLANEOUS FEEDS.

"Number 1895, sold under the name of Yellow Meal, is cotton seed meal adulterated with hulls, making the protein content about 13 per cent lower than it should be, for the price asked—$27.00 per ton.

"Atlas Dairy Feed, number 1738, is a product of the sugar factories, and is made by drying and grinding the bagasse, soaking in molasses, and again drying. Its value, as a feeding material, is probably not yet well established in this State.

"Marsden Food, number 1829, is ground straw, probably oat straw, and has about the feeding value of oat straw.

"The wire grass hay which grows abundantly in the pine woods of Florida, contains more protein and more than twice as much fat as does this material, and would no doubt be about as easily digested. But either beggarweed, cow pea, or velvet bean hay contains anywhere from two to five times as much protein and would certainly not cost any more, if as much, as does this high-sounding 'Marsden Food.'

SUMMARY.

"Judged by the samples examined, a large proportion of the concentrated feeding stuffs on the Florida market is of an inferior quality.

"All of the samples of wheat bran examined are below the minimum standard for good wheat bran.

"Some materials, as 'Marsden Food,' are sold at unreasonably high prices.

"The adulterants found where rice chaff, wheat chaff, oat hulls, ground corn cobs, corn bran, screenings, weed seeds, dirt and other foreign matter, indicating mill sweepings.

"Practically all the concentrated feeding stuffs used in this State are imported, and this constitutes a constant drain upon the wealth of the State.

"Florida can and should produce much more of her feeding materials than she is producing, and thus save to the State thousands of dollars. When the farm crops furnish sufficient carbohydrates, only feed stuffs rich in protein should be purchased. The mixtures of corn and oats, containing, as they do, large quanties of oat hulls, are not economical protein feeds.

"There is so much profit in selling ground corn cobs, wheat chaff, oat hulls, corn bran, rice hulls, etc., at the price of wheat branfi that the consumer must ever be on the watch. A careful examination with the eye or with the help of a small magnifying glass will often reveal these adulterants.

"Those who buy feeding stuffs should have the same protection as those who buy fertilizers. Such protection would promote the interests of the honest manufacturer and dealer, diminish the sale of worthless materials, and instruct the people in regard to the composition of feeding stuffs and their comparative value."

Numerous analysis of all the various feeding stuqs have been made in numbers of State Experiment Stations and by the various State and United States Agricultural Departments. The average composition of such foods are, therefore, well established. On the following page is a table of the average composition of the most commonly used feeds. Consumers are advised to purchase no feed that does not bear the guaranteed analysis, showing the percentage of protein, fat, sugar and starch on a tag attached to each package this gaurantee should be approximately near the average for the feed stuff as is shown by this table. There will of course be sight variations, however the averages given are those from a large number of careful analysis of standard feeds.

A careful study of this table and a comparison of the same with the "analysis on the tag" will assist the consumer in choosing the feed he requires for his purpose.

Purchasers having reason to doubt the truth of an "analysis on a tag" should draw a sample as provided in the law, place the same in a can (baking power box), seal it and send it to the Commissioner of Agriculture for analysis.

The method of drawing the sample, and senidng it is fully set out in the law. It should not be sent to the State Chemist, and it must be in a can, drawn and sealed in the presence of two witnesses and sent to the Commissioner of Agriculture, properly marked with the senders address and identified by number and name if more than one package or sample is sent.

R. E. ROSE,
State Chemist.

Tallahassee, August, 1905.

AVERAGE COMPOSITION OF COMMERCIAL FEED STUFF.

NAME OF FEED.	Crude Fibre	Protein	arch and Sugar	Fat	Ash
Cotton Seed Meal	7 05	43 16	24 59	9 22	6 60
Linseed Meal	8 76	34 70	35 91	5 34	6 12
Wheat Bran	8 39	15 93	54 62	4 70	5 33
Middlings,	6 36	17 14	50 60	4 26	4 30
Mixed Feed, (wheat)	7 80	16 86	54 44	4 79	5 30
Corn Meal	1 64	8 73	71 32	3 14	1 20
Gluter Meal	1 25	37 06	46 52	3 27	0 68
Gluter Feed	7 31	24 17	54 30	3 44	1 80
Hominy Feed	4 05	10 49	65 27	7 85	2 54
Rye Products (bran)	4 53	15 57	61 28	3 02	3 80
Barley Sprouts	10 94	27 20	42 66	1 56	6 34
Distillers Grains	12 90	32 23	33 34	12 09	1 86
Oat Feed	20 57	7 91	54 58	3 26	5 34
Provinder	3 91	10 62	67 34	4 03	1 83
Victor Feed	10 63	8 83	62 46	4 02	3 64
XXX Corn and Oat Feeds	9 94	9 66	64 66	5 09	3 24
Corn and Oat Feeds	12 09	8 73	61 73	3 73	3 22
Proprietary Horse Feeds	9 57	12 48	60 54	4 27	2 83
Molasses Feeds	8 49	16 34	51 72	1 79	6 18
Poultry Feeds	4 62	15 89	60 27	5 32	27 63
Beef Scrap	......	44 70	3 28	14 75	29 20
Quaker Dairy Feed	15 53	14 42	52 12	4 05	5 31
Creamery Feed	10 07	20 06	51 00	5 38	3 57

Compiled from report of Conneticut Expermental Station, 1904.

JACKSONVILLE PRICE CURRENT, AUG. 26, 1905.

FEEDSTUFFS.

Pure wheat bran, per ton, $22.50.
Middlings, per ton, $23.
Purina feed, per ton, $26.
Victor meal, per ton, $26.
Cotton hulls, per ton, $9.75.
Other quotations are:
Gluten food, for cows, per ton, $27.
Jersey cow feed, per ton, $22.
Purina stock food, 100 sacks, 175 pounds, $25.50.
Purina stock feed, less quantity, 100 pounds, $26.00.
Southern seed rye, per bushel, $1.25.
Texas rust-proof seed oats, per bushel, 65c.
May or Burt seed oats, 32 pounds to bushel, per bushel, 80 cents.
Cotton seed meal, bright, 100 sacks, per ton, $26.
Cotton seed meal, bright, less quantity, per ton, $26.50.
Cotton seed meal, dark, carload, per ton, $24.
Cotton seed meal, dark, 100 sacks, per ton, $24.50.
Salt, 200 pound sacks, per sack, $1.
Rock salt, for stock, per pound, 1 1-2c.

HAY AND GRAIN.

Hay, No. 1 Timothy, per ton, $18.
Hay, No. 2 Timothy, per ton, $17.
Hay, No. 1 clover mixed, per ton, $17.
Choice Timothy, per ton, $19.00.
Hay in 100-bale lots, 50c less per ton.
White Flint corn, fancy Tennessee, 100 pound sacks, $1.35.
Mixed corn, 100-pound sacks, $1.30.
Oats, fancy, 100-pound sacks, $1.40.
Oats, white, 100-pound sacks, $1.35.
Corn and oats, 100-sack lots, 3c less per sack.
Other quotations are:
White corn, car load, per sack of 110 pounds, $1.37.
White corn, 100 sacks, per sack of 110 pounds, $1.43.
White corn, less quantity, per sack of 110 pounds, $1.46.

White corn, car load, per sack of 100 pounds, $1.41.

Mixed corn, 100 sacks, per sack of 110 pounds, $1.32.

Mixed corn, 100 sacks, per sack of 110 pounds, $1.38.

Mixed corn, less quantity, per sack of 110 pounds, $1.41.

Mixed corn, car load, per sack of 100 pounds, $1.35.

Mixed corn, car load, per sack of 100 pounds, $1.30.

Mixed corn, less quantity, per sack of 100 pounds, $1.32.

White oats, car load, per sack of 125 pounds, $1.69.

White oats, 100 sacks, per sack of 125 pounds, $1.71.

White oats, less quantity, per sack of 125 pounds, $1.72.

White oats, car load, per sack of 100 pounds, $1.35.

White oats, 100 sacks, per sack of 100 pounds, $1.37.

White oats, less quantity, per sack of 100 pounds, $1.40.

Fancy white clipped oats, 125 pounds, 8c per sack higher.

Fancy white clipped oats, 100 pounds, 6c per sack higher.

Mixed oats, 100 sacks, per sack of 125 pounds, $1.69.

Mixed oats, 100 sacks, per sack of 125 pounds, $1.71.

Mixed oats, less quantity, per sack of 125 pounds, $1.73.

Mixed oats, car load, per sack of 100 pounds, $1.35.

Mixed oats, 100 sacks, per sack of 100 pounds, $1.37.

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